

Full Circle Magazine



Issue #105

Get *unlimited* access to a cutting-edge technology and business library with **Apress Access!**

For **\$199**

YOU GET:

- Unlimited access to Apress titles for a full year
- Instant access to each new Apress publication
- Compatibility with any device—desktop, laptop, or mobile
- Use of our new exclusive-to-Apress reader with unparalleled search functions
- Option to download any eBook for just \$4.99 for a limited time



www.apress.com |  [@apress](https://twitter.com/apress)

Want more info? Check out www.apress.com/subscription





The articles contained in this magazine are released under the Creative Commons Attribution-Share Alike 3.0 Unported license. This means you can adapt, copy, distribute and transmit the articles but only under the following conditions: you must attribute the work to the original author in some way (at least a name, email or URL) and to this magazine by name ('Full Circle Magazine') and the URL www.fullcirclemagazine.org (but not attribute the article(s) in any way that suggests that they endorse you or your use of the work). If you alter, transform, or build upon this work, you must distribute the resulting work under the same, similar or a compatible license. Full Circle magazine is entirely independent of Canonical, the sponsor of the Ubuntu projects, and the views and opinions in the magazine should in no way be assumed to have Canonical endorsement.

Please note: articles in this magazine are provided with absolutely no warranty whatsoever; neither the contributors nor Full Circle Magazine accept any responsibility or liability for loss or damage resulting from readers choosing to apply this content to theirs or others computers and equipment.

Welcome to another issue of Full Circle.

Welcome to the first Full Circle of 2016! We're back to a full house with Python, LibreOffice, Inkscape, LaTeX (for valentine's day, of course), and the start of a new series on migrating from VAX/VMS. It's a bit over my head, but it's still an interesting read. Also very interesting is Tom's quick HowTo on using GnuCash for your Internet banking.

Elsewhere, I continue with my Arduino Brewduino (as I'm calling it) and the building of my 3D printer. I've also done a quick review of the new Vivaldi browser. Currently in beta2 state, but still quite impressive. Speaking of reviews; Charles reviews his new toy, the MyGica ATV582 TV box. I have a similar box (mine is DroidBox branded) and they really are nice.

In the world of Ubuntu phones, we have OTA-9! This is a big one as it's a major update to the Unity that's been running on previous Ubuntu Touch versions. We're getting ever closer to the convergence! Whispers on the grapevine tell me that a convergence device will be unveiled soon. Probably as soon as next month.

You'll see it mentioned throughout this issue, but I'm experimenting with a new Full Circle podcast of sorts. I was hunting for a Linux/Ubuntu podcast that did just news. No chit-chat. Just news. And found nothing. So I'm thinking of starting the Full Circle Weekly News podcast. Just news, and only about 10 minutes per show. I've released [episode #00 as a test/beta](#). Is it something you'd listen to?

All the best, and see you next year!

Ronnie ronnie@fullcirclemagazine.org

NEWS

Compiled by Arnfried Walbrecht



Audio [News-#00](#)

Audio [News-#01](#)

Ubuntu Studio Wallpaper Contest

Ubuntu Studio 16.04 will be officially released in April 2016. As this will be a Long Term Support version, we are most anxious to offer an excellent customer experience on the desktop. Therefore, the Ubuntu Studio community will host a wallpaper design contest! The contest is open to all digital artists and amateurs, especially Ubuntu Studio enthusiasts. We hope to collect the coolest, most beautiful, inspiring, innovative and downright slick desktop wallpapers. Each artist may submit up to 4 pieces. The Ubuntu Studio community will vote on and select 16 final Ubuntu Studio Wallpapers! (See what we did there? 16? 4? Clever, eh?)

If you are enjoying Edubuntu, Ubuntu, Ubuntu-Kylin, Ubuntu-Mate,

Ubuntu-Gnome, Kubuntu, Lubuntu, Xubuntu or Ubuntu Server, we formally invite and welcome your contributions as well!

If you are interested, take a look at the Ubuntu Studio wallpapers over the years: <http://flic.kr/s/aHskopgqCF>.

Full details: <https://wiki.ubuntu.com/UbuntuStudio/Artwork/UserShowcase> Source: C.F. Howlett

Raspberry Pi Flavour Lets Anyone Build an Ubuntu OS for ARM Devices

Running Ubuntu Linux on Raspberry Pi hardware -- and, maybe, ARM-based devices in general -- has become easier thanks to a new tool called Ubuntu Pi Flavour, which is developed by the team behind Ubuntu MATE.

The goal of the new tool is to "make as many Ubuntu flavours for the Raspberry Pi 2 as we can," according to its developers. That means releasing new Ubuntu-based GNU/Linux distributions that run on top of Raspberry Pi -- the tiny, inexpensive devices that lend themselves to IoT-type applications, among other endeavors.

Ubuntu Pi Flavour is not a project sponsored by Canonical, the company that supports Ubuntu. It's instead the work of the developers behind Ubuntu MATE, a derivative of Ubuntu that uses the MATE desktop interface in place of Canonical's Unity.

The tool grew out of efforts to build an Ubuntu MATE release that supported Raspberry Pi, according to the programmers.

Source: <http://thevarguy.com/open-source-application-software-companies/raspberry-pi-flavour-lets-anyone-build-ubuntu-os-arm-devi>

Ubuntu aims for true convergence across devices in 2016

It seems Canonical, Ubuntu's parent company, may achieve its convergence goal in the new year. The move will allow you to get the same experience of Ubuntu whether on PC, tablet or phone. This will likely mean apps, too, will become cross-platform.

The news came from Ubuntu's Google+ page. It posted an image showing convergence on the Ubuntu platform. There are two desktop releases of Ubuntu planned for 2016 - Ubuntu 16.04 LTS (Long Term Support) and Ubuntu 16.10. With LTS releases, Canonical likes to keep the releases stable enough for deployment in an enterprise environment.

Unity 8 - the desktop environment that will allow for convergence - has not been used as the default desktop environment on any prior Ubuntu for desktop releases. Therefore, it may not be stable enough to be used as the default in the LTS release, but it will definitely be an option for more advanced users to select on the login screen.

Source: <http://www.neowin.net/news/ubuntu-aims-for-true-convergence-across-devices-in-2016>

Google plots WhatsApp rival with artificial intelligence

The service will pull information from the web in order to answer users' questions in addition to allowing people to connect with friends like a traditional messaging app. However, according to a report from The Wall Street Journal, Google could be planning a new way of going about getting information. Google's own chatbot service is headed up by Google old-timer Nick Fox, who is now VP of communication services at Google, with sources claiming the search giant has been working on the service for at least a year already. There are a number of popular messaging applications like WhatsApp and Messenger services offered by Facebook, and WeChat service offered by Tencent Holdings Ltd. Google also has a messaging service known as Hangouts. The latest rumors say that Google is working on an entirely new messaging service, but instead of just providing messaging capabilities, it will also feature chatbots. Google hasn't commented about the WSJ reports yet.

Google may have a new artificial intelligence project in the works. Additionally, Google will allow other developers to hook in their own services via chatbots.

Source: <http://thevillagessuntimes.com/2015/12/27/google-plots-whatsapp-rival-with-artificial-intelligence/>

Linux Foundation to Develop Hyperledger along with Others

The Linux Foundation, the technology non-profit organization responsible for one of the largest open source projects in the tech sphere to date, is now going to collaborate with technology and banking giants to work on yet another open source technology. The new technology in question is Blockchain, the technology powering bitcoin and a lot of other cryptocurrencies enabling transactions across the network.

According to a release on PasteBin – a widely used text storage application on the internet, the Linux Foundation will be collaborating with a long list of companies to create industry specific applications, platforms and hardware systems. These applications will be based on blockchain technology.

The endless list of companies includes the likes of Accenture, ANZ bank, Cisco, CLS, Deutsche Borse, Digital Asset Holdings, DTCC, Fujitsu, IC3, IBM, Intel, JP Morgan, London Stock Exchange Group, Mitsubishi UFJ Financial Group, R3, State Street, SWIFT, VMware and Wells Fargo. The group of companies, along with Linux Foundation, will be invested in creating what is called the HyperLedger.

Source: <http://www.newsbtc.com/2015/12/27/linux-foundation-hyperledger/>

Where Ubuntu (and others) Went Wrong

I believe Ubuntu and distributions based on Ubuntu are far better

than ChromeOS. Ubuntu offers a far greater selection of software and it can be installed on just about anything. The downside to distributions that aren't designed to be walled gardens is that it's far easier to experience confusion and errors. An example of this would be comparing a self-driving car to a driver controlled vehicle. To crash a driver controlled vehicle, one only needs to aim the car at a wall and hit the gas pedal. Same idea applies to distributions like Ubuntu. You're provided with a level of control that allows for success or failure, depending on what the end user chooses. Unfortunately this level of control isn't a great idea for everyone.

My vision for distributions like Ubuntu is to fill the gap that ChromeOS fails to. Despite its occasional hiccups, I think Ubuntu is ready to do this. Sadly, 99% of the world have no idea that distributions like Ubuntu even exist.

Source: <http://www.datamation.com/open-source/where-ubuntu-and-others-went-wrong.html>

Debian Linux founder Ian Murdock dead at 42

Debian GNU/Linux founder Ian Murdock has died. He was 42. Murdock, who lived in San Francisco, is best known for creating the open-source distro in 1993. He had just last month started working for tech startup Docker in the city. On Monday afternoon, he posted a string of distressing and erratic tweets, revealing he had been arrested near his home by police, accused of assaulting an officer, and taken to hospital. He also threatened to kill himself. After people reached out to him, Murdock appeared to calm down, and vowed instead to clear his name. Murdock died that evening. His Twitter account has since been disabled.

Source: http://www.theregister.co.uk/2015/12/30/ian_murdock_debian_founder

Erica, the 'most beautiful and intelligent' android, leads Japan's robot revolution

Erica enjoys the theatre and animated films, would like to visit south-east Asia, and believes her ideal partner is a man with whom she can chat easily. She is less forthcoming, however, when asked her age. "That's a slightly rude question ... I'd rather not say," comes the answer. As her embarrassed questioner shifts sideways and struggles to put the conversation on a friendlier footing, Erica turns her head, her eyes following his every move.

It is all rather disconcerting, but if Japan's new generation of intelligent robots are ever going to rival humans as conversation partners, perhaps that is as it should be. Erica, who, it turns out, is 23, is the most advanced humanoid to have come out of a collaborative effort between Osaka and Kyoto universities, and the Advanced Telecommunications Research Institute International (ATR). At its heart is the group's leader, Hiroshi Ishiguro, a professor at Osaka University's Intelligent Robotics Laboratory, perhaps best known for creating Geminoid HI-1, an android in his likeness, right down to his trademark black leather jacket and a Beatles mop-top made with his own hair.

Source: <http://www.theguardian.com/technology/2015/dec/31/erica-the-most-beautiful-and-intelligent-android-ever-leads-japans-robot-revolution>

Google patches five critical Android security flaws

Google has fixed a dozen security vulnerabilities in Android, five of which it rated "critical."

Of the highest-rated vulnerabilities in its sixth monthly release, Google said one nasty flaw could allow an attacker to remotely execute code -- such as malware -- by exploiting a flaw in how Android processes some media files.

This time around, Android 5.0 and later -- including "Marshmallow" 6.0 -- are affected.

And if you think you've heard this before, it's because you probably have. That's because month after month, the "mediaserver" service remains the most problematic component of Android. So much so

that Google has copied and pasted almost word-for-word the same text for the advisory for every month the component is affected.

Source: <http://www.zdnet.com/article/google-fixes-five-critical-android-flaws-in-monthly-updates/>

Android open source move could boost Java and aid in legal battles with Oracle

Google's planned mobile operating system, which has been referred to as Android N, will leverage OpenJDK APIs rather than Google's own Java implementation alone. The move has been praised as good for Java overall, and might help the company in its ongoing legal battle with Oracle.

Oracle has griped that Android violates Java copyrights and patents. OpenJDK provides an accessible open source version of Java.

Google's OpenJDK shift "could be the start of the long anticipated 'peace process' or at least a ceasefire between Google and Oracle," Almog said. "This could allow us all to align behind one Java version eventually (taking into consideration the slow Android update process). It could help bring Java back into vogue with some developers who considered the closed nature of Java problematic."

Source: <http://www.infoworld.com/article/3018787/java/android-open-source-move-could-boost-java-and-aid-in-legal-battles-with-oracle.html>

BlackBerry To Focus On Android Smartphones In 2016

BlackBerry "BBRY" will not release a new BlackBerry 10 smartphone in 2016. Instead, the struggling device maker will spend the year focusing on Android-powered devices, with plans to release one—possibly two—powered by Google's GOOG -2.32% Android.

The decision by Blackberry CEO John Chen to place a stronger emphasis on Android handsets, revealed during an interview with CNET at the International Consumer Electronics Show in Las Vegas, shouldn't come as a surprise. BlackBerry 10 failed to gain momentum with consumers and developers after its initial release in 2013.

Source: <http://fortune.com/2016/01/07/blackberry-android-smartphones/>

Data Science and Artificial Intelligence Remain Synonymous at CES

When most people hear about artificial intelligence, they think about protocol droids, Jarvis, or SkyNet. But, in reality, A.I. is just a tool — and one we are already wielding. Understanding A.I. is a matter of understanding what that tool does and, for the moment, that tool appears to destroy traditional industry models to clear space for new services. Cars become car rides. The hospitality sector becomes rooms. The music industry becomes a steady stream of perfect chords.

Speaking to a crowd of would-be disruptors at the Consumer Electronics Show this week, the four experts, whose powers combined to form “The Future of Artificial Intelligence” panel, described what has happened and provided a straight-forward prophecy: more of the same.

Source: <https://www.inverse.com/article/9951-data-science-and-artificial-intelligence-remain-synonymous-at-ces>

Hackers rejoice, Kali Linux NetHunter 3.0 Android Mobile Penetration Testing Platform released

Security researchers, ethical hackers and pentesters can now rejoice. The ultimate pentesting tool for Android smartphones and tablets, Kali Linux NetHunter 3.0 Android application, has been released by Offensive Security, the company behind Kali Linux. The application

was in development for over a year. Kali NetHunter 3.0 boasts of a completely redesigned user interface which has been application centric. Offensive Security said that the new application will support new and complex attacks while providing support for managing your Kali chroot independently, including the ability to delete and rebuild the chroot, along with support for selecting individual metapackages in the respective chroot.

Source: <http://www.techworm.net/2016/01/kali-linux-nethunter-3-0-android-mobile-penetration-testing-platform-released.html>

Mycroft Open Sources Artificial Intelligence Library for IoT Devices

Mycroft says it aims to assure the future of open source artificial intelligence through its release this week of Adapt – an intent parser engine for embedded devices – as an open source project.

Mycroft's main product is a device of the same name that is designed to manage IoT devices in the smart home and office. The chief selling point of the Mycroft is its ability to predict and learn what users want in an intelligent way.

That requires an AI software framework that can translate human thoughts into automated behavior. Toward that end, the company has been developing its Adapt intent parser as a library of functions that programmers can use to help devices or apps interpret natural language input.

Source: <http://thevarguy.com/open-source-application-software-companies/mycroft-open-sources-artificial-intelligence-library-iot->

Ubuntu Touch to Support Encryption of User Data

The Ubuntu Touch operating system is going to provide support for encryption of user data, developers have revealed.

It wasn't a secret that Ubuntu Touch will get encryption, but it's also not listed as an upcoming feature. It's buried in a wiki entry with plans for Ubuntu Touch, but it's nice to see that it's still being considered, even if it's not going to arrive anytime soon.

Ubuntu Touch is a Linux distribution before being an operating system for mobile devices, which means that integrating encryption shouldn't be a difficult thing to implement. The problem is encryption usually has an impact on the overall performance. Powerful PCs can deal with it much easier, but a phone that has limited hardware won't be too happy.

Source:<http://news.softpedia.com/news/ubuntu-touch-to-support-encryption-of-user-data-498694.shtml>

Canonical: One Billion People "Benefit from" Ubuntu Linux

Ubuntu Linux has more than one billion users -- or at least people who "benefit" from it, whether they know it or not -- according to a recent statement from a Canonical executive about how many people actually run its open source operating system.

Dustin Kirkland, who works on Ubuntu Product and Strategy for Canonical, said in a blog post that "more people use Ubuntu than anyone actually knows." That language seems to be an admission that Canonical actually has relatively little idea how many people run Ubuntu, and Kirkland offered few hard statistics.

He did, however, provide some figures that give a sense of just how widely used Ubuntu is. The most concrete ones center on the cloud, where 20 million instances of Ubuntu were launched in 2015, according to Kirkland. He also remarked that Docker users have created Ubuntu images more than 35 million times.

Noting that Ubuntu is also in use on smartphones, Google's self-driving cars, the servers of lots of companies and plenty of other places, Kirkland concluded, "I bet there are over a billion people today using Ubuntu -- both directly and indirectly. Without a doubt, there are over a billion people on the planet benefiting from the

services, security, and availability of Ubuntu today."

Source:<http://thevarguy.com/open-source-application-software-companies/canonical-one-billion-people-benefit-ubuntu-linux>

Copyright Industry Rhetoric Ignores The Existence Of Linux And Wikipedia

The ever-repeated parrot statement from the copyright industry is that "authors must be paid". This ignores the existence of Wikipedia and about three billion smartphones, and is therefore simply false.

The parroted question-and-assertion from the copyright industry continues to be "authors must be paid" and "how will the authors get paid?"

This question-and-assertion isn't just irrelevant, it's also a sickening existential defense from an industry that makes sure that 99.99% of music authors never see a single cent in royalty. (A more proper question would be how a music author or composer can possibly earn a living with the copyright industry still in existence.)

Nevertheless, the question and assertion assume that the copyright monopoly exists with the purpose of making sure somebody gets paid. That's not why it exists. More importantly, the question and assertion also assume that no culture, knowledge, or technology would get created without the copyright monopoly (or outside of the copyright industry).

Source:<https://torrentfreak.com/copyright-industry-rhetoric-ignores-the-existence-of-linux-and-wikipedia-011016/>

python-for-android now supports Python 3 APKs

It's been a long time coming, but we can finally make the announcement... python-for-android now supports Python 3 Android apps! This naturally includes Kivy, but also should work for anything else you can package with python-for-android, such as

apps made with PySDL2. Using Python 3 remains experimental for now – it works, but doesn't yet perform all possible optimisations and hasn't been as widely tested as Python 2. However, there should be no extra application requirements, and the remaining issues and optimisations are being worked on.

python-for-android is a packaging tool for turning Python applications into Android APKs. It was originally created to make apps with the very cross-platform Kivy graphical framework. However, the original python-for-android had flaws including being quite inconvenient to modify for non-Kivy apps, hard to extend for multiple architecture support, hard to extend internally, and supported building apps only with Python 2.

Source:<https://torrentfreak.com/copyright-industry-rhetoric-ignores-the-existence-of-linux-and-wikipedia-011016/>

What's new and nifty in Linux 4.4

2015 saw a lot of controversy about how Linus Torvalds directs the Linux project. But, that didn't stop him from delivering the latest update of the Linux kernel, Linux 4.4, on time. This release, while not a blockbuster [...] has many outstanding features. The most significant of these is hidden deep in the notes.

With 4.4, Linux now offers much improved support for Intel's new Skylake processor family. Intel claims that Skylake has double the performance and triple the battery life of that five-year old laptop in your bag. Without deep operating system support, such as Linux now offers, that improved functionality is largely hidden.

The Linux kernel 4.4 also offers better support for ARM's 64-bit processors and Qualcomm's high-bandwidth capable Snapdragon 820. The popular makers' Raspberry Pi system also has better graphics support thanks to a beta Kernel Mode Setting (KMS) driver.

Source:<http://www.zdnet.com/article/whats-new-and-nifty-in-linux-4-4/>

Netflix For Android TV Gets Smart Lock Update To Make Logins Easier And More Convenient

Some Android users might be unaware that Google's OS has a Smart Lock feature which recently became available for the Netflix Android TV app.

Smart Lock lets users keep their gadgets in an unlocked/locked state depending on location, or if the gadget detects an authorized device in the vicinity. For instance, if your Chromebook has the Smart Lock functionality activated and you get near it with your Android handset, the Chromebook detects the fellow device and unlocks itself. This way, entering your log-in credentials will no longer be necessary. When you leave the room, the computer locks itself back.

Having to input one's ID and password can be tedious. Enter Smart Lock for Passwords, which lets users save the combos of app usernames-passwords, speeding up the sign in process.

Source:<http://www.techtimes.com/articles/123455/20160112/netflix-for-android-tv-gets-smart-lock-update-to-make-logins-easier-and-more-convenient.htm>

Configuring Linux for music recording and production

If you're a programmer, you'll find GNU/Linux systems quite powerful and robust. When it comes to areas like visual arts, video, business, or gaming, you'll find some tools with promising potential, but lots of bugs, quirks, and challenges. You can accomplish whatever you need in most cases, but the setup and learning curve may not be as smooth as proprietary options on proprietary systems.

In this article, based on my talk at SCaLE 14x this year, we'll cover the basics of configuring your Linux system for music making, highlighting what works best and acknowledging the challenges with recommendations on how to find help.

Source:<https://opensource.com/life/16/1/configuring-linux-for->

Cordova Ubuntu 4.3.2 Brings the Apache Cordova Project to Ubuntu Linux

Cordova Ubuntu 4.3.2 is quite a small release that enables the click framework by default on the Ubuntu SDK software for the Ubuntu 15.04 (Vivid Vervet) series of operating systems, which is used by the Ubuntu Touch team.

Additionally, the new Cordova Ubuntu release manages to update the check_reqs script to only verify the node deps instead of the Ubuntu build dependencies, which are automatically checked during the build process.

"I am happy to announce that 'Cordova Ubuntu 4.3.2' has now been officially released," said David Barth in the release announcement published on the Ubuntu Touch mailing list. "This is a patch release, with several usability improvements and an update of the default framework to ubuntu-sdk-15.04."

Source:<http://news.softpedia.com/news/cordova-ubuntu-4-3-2-brings-the-apache-cordova-project-to-ubuntu-linux-498827.shtml>

Linux Kernel 4.4 LTS Is Unofficially Available for Ubuntu, Debian, and Linux Mint

As you may or may not know, Linux kernel 4.4 LTS was officially released on January 10, 2016, and Softpedia was the first to announce it, along with the details about the multitude of new features that were included in this long-term supported branch of the Linux kernel.

Arne Exton is known to immediately build a custom kernel for Ubuntu, Debian and Linux Mint systems based on the latest stable and most advanced Linux kernel release, version 4.4 in this case, which users can install right now on their supported GNU/Linux operating systems (see below for installation instructions).

But first, a few technical details that you need to know before attempting to install this custom Linux kernel package on your OS. The kernel 4.4.0-0-exton package that has been compiled by Arne Exton is the equivalent of the Linux kernel 4.4 found on the kernel.org website, it is supported only on 64-bit systems, and has been compiled the same way as all official Ubuntu kernels are.

"I have compiled yet another Ubuntu/Debian kernel for 64-bit systems. This time kernel 4.4.0-0-exton, equivalent to Kernel.org's latest stable kernel 4.4.0 released 160110," said Arne Exton for Softpedia. "My self-compiled Ubuntu kernels can be used in all types of modern Ubuntu systems, including Mint."

Source:<http://news.softpedia.com/news/linux-kernel-4-4-lts-is-unofficially-available-for-ubuntu-debian-and-linux-mint-498837.shtml>

AT&T Adopts Canonical's Ubuntu in Push to Replace Proprietary Systems with Open-Source Tech

AT&T Inc. plans to use Canonical Ltd.'s open-source Ubuntu operating system in networking, cloud and enterprise applications as the company continues to move away from proprietary technology in internal systems and telecommunications services it offers to customers.

The two companies announced Wednesday that they will build Ubuntu applications across AT&T's internal and external systems in a broad implementation. Ubuntu, a version of the Linux operating system sold and supported by Canonical, is prevalent in the OpenStack cloud computing infrastructures of large Internet companies, such as Amazon.com Inc. and Netflix Inc. The idea is to put more of AT&T's telecommunications workload in the cloud, which can be faster and less expensive than traditional systems, said John Zannos, Canonical's vice president of cloud alliances and business development, in an interview. "This is a very strategic partnership for both companies," he said.

Source:<http://blogs.wsj.com/cio/2016/01/13/att-adopts->

Google's AI vs. lazy content: Guess who wins

The days of Artificial Intelligence (AI) are upon us. We have entered an age of machines that can learn from experience, of algorithms that propagate smarter algorithms as they collect more data. While a Terminator-style awakening of Skynet is not yet at hand, advancements in machine learning are introducing possibilities formerly known only in the realm of science fiction.

These breakthroughs are poised to dramatically improve user experience across an array of channels. But digital marketing mavens of all stripes will likewise have to contend with revolutionary changes in SEO and content strategy. They'll need to understand what these changes driven by machine learning entail — and what it will take to adapt, to succeed and to thrive in a rapidly evolving, uncertain future.

Source:<http://www.campaignlive.com/article/googles-ai-vs-lazy-content-guess-wins/1379130>

Google chairman Eric Schmidt says artificial intelligence platforms can 'change the world'

Former Google CEO Erich Schmidt has high hopes for artificial intelligence (AI), Bloomberg reports. The billionaire, who is now executive chairman of Google's parent company, Alphabet, delivered a talk in New York this week where he claimed AI has the potential to fix some of the world's "hard problems," including population growth, climate change, human development, and education.

The conference was also attended by representatives from Facebook and DeepMind, a London-based AI startup that was bought by Google.

Self-learning platforms underpinned by AI can help scientists analyse large datasets and understand the links between cause and effect, according to Schmidt.

Schmidt said the field of AI is becoming so important that companies need to start working together to create standardised approaches where they use similar tools and publish their breakthroughs to the academic community.

"Every single advance has occurred because smart people got in a room and eventually they standardised approaches" said Schmidt. "The promise of this is so profound that we - Alphabet, Google, whatever our name is at the moment - are working incredibly hard to advance these platforms."

Source: <http://telecom.economictimes.indiatimes.com/news/google-chairman-eric-schmidt-says-artificial-intelligence-platforms-can-change-the-world/50556584>

UbuCon Summit in California to Cover Convergence, Gaming, IoT, and Everything Else

The UbuCon Summit is getting closer, and it will take place on January 21-22, 2016. Here is what's going to happen on those two days.

It's been a while since the last Ubuntu Summit that gathered people in the same room, and it looks like it's going to be a really interesting convention. For the past few years, Ubuntu summits happened behind web cameras and developers didn't leave their homes. The need for an actual meeting has been growing in the community, and now it's finally happening.

The Ubuntu Summit will be pretty much like all of the others, with the exception that the discussions will be more focused on some of the bigger aspects of the Ubuntu ecosystem and less on specific tasks. The Ubuntu Developer Summits are still the place for those discussions, so nothing is lost.

Source: <http://news.softpedia.com/news/ubucon-summit-in->

China's Baidu Releases Its AI Code

Google and Facebook aren't the only ones vying to be the standard bearer for the hottest AI technique around. China's leading Internet search company, Baidu, which is also investing heavily in a popular and powerful machine-learning technology called deep learning, today released some key code that it uses to make this AI software run very efficiently.

Baidu's code was recently used to build an impressive speech-recognition system called Deep Speech 2. For some short sentences, this system is better than most humans at recognizing speech correctly (see "Baidu's Deep-Learning System Rivals People at Speech Recognition"). This is an especially useful technology for Baidu, because it offers a better way for the company's many millions of users to access its services, especially on mobile. Typing Chinese characters on a smartphone is tricky and complex, and many people in China already prefer to use their voice to send short messages or to search the Web for information.

Source: <http://www.technologyreview.com/news/545486/chinas-baidu-releases-its-ai-code/>

Android Auto is coming to 40 car models this year

Google is positive about the road ahead for Android Auto, saying it will come to 40 car models, and support more apps, this year.

Android Auto brings messaging, mapping, entertainment, media playback and other apps to cars, but via a smartphone. The apps run on an Android smartphone, which plugs into an in-car display via a USB port.

Hyundai was first to bring Android Auto to its dashboard, and, today, ten car models in a few countries have Android Auto. The 40

car models launching this year will give Android Auto a "global" reach, said Daniel Holle, product manager for Android Auto at Google, during the Ubiquity Developer Summit in San Francisco this week.

One obvious use for Android Auto is Google Maps, which will provide in-car navigation. Users can also answer calls, listen to music, set up reminders, get the latest news, receive notifications, or use applications like Google Hangout.

Source: <http://www.technologyreview.com/new/> <http://www.computerworld.com/article/3022527/mobile-wireless/android-auto-is-coming-to-40-car-models-this-year.htmls/545486/chinas-baidu-releases-its-ai-code/>

MJ Technology wants to crowdfund Ubuntu tablets with Atom x7 CPU

There's no shortage of Windows, Android, and iOS tablets on the market. But if you want a tablet that runs Ubuntu Linux, your best bet right now is probably to buy an existing tablet and install the OS yourself.

A startup called MJ Technology wants to change that, and the company has announced that it will launch a crowdfunding campaign for two Ubuntu tablets on January 18th.

MJ Technology says the 8.9 inch model has a 7,500 mAh battery, while the 10.1 inch tablet has an 8,500 mAh battery – for up to 8 hours of battery life on the smaller tablet and up to 9 hours of run-time on the larger version.

The tablets won't ship until June at the earliest, but the company says it plans to load them up with Ubuntu 16.04 software, which should be available by then.

Source: <http://liliputing.com/2016/01/mj-technology-wants-to-crowdfund-ubuntu-tablets-with-atom-x7-cpu.html>

Ocean is a phone-size Linux server that runs on batteries

A new Node.js Linux server has launched for developers who want to be able to write software for Internet of Things applications, and other small tasks. The server is called Ocean and it is about the size of a smartphone.

The Ocean computer is pre-loaded with Linux and uses a 1GHz dual-core processor, 1GB of RAM, Bluetooth 4.0 LE, and WiFi. Power comes from a 4200 mAh battery and it has a USB 3.0 port.

The server can run with the CPU at continuous utilization for two days on a single charge. What Ocean doesn't have is a port to connect a screen to see what you are working on. Presumably, you need to use the wireless connectivity to see what you are doing as you work.

Source: <http://www.slashgear.com/ocean-is-a-phone-size-linux-server-that-runs-on-batteries-15423305/>

OpenSSH Flaw Exposes Linux to Roaming Risk

The open-source OpenSSH project today announced a critical update, patching a pair of vulnerabilities that an attacker could have used to steal user information. OpenSSH is a widely used and deployed technology that is intended to enable secure remote access to a system. OpenSSH is an implementation of the SSH (Secure Shell) protocol 2.0 that can run on both client and server systems and is typically included in all major Linux distributions. "The OpenSSH client code between 5.4 and 7.1 contains experimental support for resuming SSH-connections (roaming)," the OpenSSH project advisory on the update states. "The matching server code has never been shipped, but the client code was enabled by default and could be tricked by a malicious server into leaking client memory to the server, including private client user keys." Security firm Qualys first reported the roaming vulnerability to the OpenSSH project and has identified the flaw as CVE-2016-0777.

"The information leak is exploitable in the default configuration of the OpenSSH client, and (depending on the client's version, compiler, and operating system) allows a malicious SSH server to steal the client's private keys," Qualys warns in its advisory. "This information leak may have already been exploited in the wild by sophisticated attackers, and high-profile sites or users may need to regenerate their SSH keys accordingly."

Source: <http://www.eweek.com/security/openssh-flaw-exposes-linux-servers-to-roaming-risk.html>

First Opera Web Browser Beta Update in 2016 Lets Linux Users Watch Netflix Movies

Opera 35.0 Build 2066.23 has been pushed earlier to the Beta channels of the cross-platform web browser for all supported operating systems, including GNU/Linux, Mac OS X and Microsoft Windows, allowing users to test the latest features that have been implemented since the previous Beta build.

"It's a fast-paced beginning of the year: today, we have the beta update, first one in 2016. This is a maintenance update with the following highlights," said Aneta Reluga, Desktop QA Team at Opera Software. "For the full list of fixes, I'm inviting you to check out the changelog - a short one, but full of merit."

There aren't so many improvements in the Opera 35.0 Build 2066.23 web browser, as you can see from the changelog attached at the end of the article, but the highlights are better support for watching Netflix videos on Linux platforms, and more smooth bookmark deduplication functionality.

Source: <http://news.softpedia.com/news/first-opera-web-browser-beta-update-in-2016-lets-linux-users-watch-netflix-movies-498953.shtml>

Canonical Releases All-Snap Raspberry Pi 2 and 64-Bit Images for Snappy Ubuntu 16.04

Everyone is expecting 2016 to be the year of the Snappy Ubuntu-powered devices, and Canonical needs to deliver IoT (Internet of Things) developers the latest technologies and tools that they require in order to create the most innovative devices. As you might know, we've actually covered the development of the Snappy Ubuntu Core operating system during the past few months with all sorts of interesting articles.

Therefore, once again, we're informing our readers about the latest Snappy technologies, as the Snappy team at Canonical has just released the first images for the all-snap architectures. They are available for download right now as binary packages for Raspberry Pi 2 single-board computers and 64-bit platforms, along with their corresponding ubuntu-device-flash utils for flashing the images on your devices.

Source: <http://news.softpedia.com/news/canonical-releases-all-snap-raspberry-pi-2-and-64-bit-images-for-snappy-ubuntu-16-04-498954.shtml>

Ubuntu Touch OTA-9 Custom Tarballs Now Ready for Meizu MX4 and BQ Aquaris Phones

According to Mr. Zemczak, the day of January 14 was not quite exciting for landings, as the Ubuntu Touch devs only managed to release a new version of the powered daemon, which promises to fix the annoying issue where that phone's screen remained black after rejecting an outgoing call, as well as a new dbus-cpp version that fixes D-Bus bugs.

Moreover, the indicator-sound component was updated as well, and the development team managed to address the issue with displaying and hiding of the high-volume warning. Also, a trust-store translation template update was pushed as well to the OTA-9 development channels.

Source: <http://news.softpedia.com/news/ubuntu-touch-ota-9-custom-tarballs-now-ready-for-meizu-mx4-and-bq-aquaris-phones-498946.shtml>

GNOME Software Now Available in Ubuntu 16.04, with a PPA

One of the most interesting things that came out of the latest Ubuntu Developer Summit was the fact that Canonical wanted to ditch the Ubuntu Software Center for GNOME Software. This information has been very well received by the community, which is not terribly fond of that particular application.

In fact, users have been asking why GNOME Software isn't available in the daily build of Ubuntu 16.04 LTS. The launch of this OS is planned for April 2016, so there isn't much time left. It turns out that they have been working on this transition, but it's not as simple as you might think, and a lot of things depend on it.

The Ubuntu developers are not yet ready to push the modified GNOME Software into the main Xenial branch, and there still a few problems that have to be solved before that happens.

Source: <http://news.softpedia.com/news/gnome-software-now-available-in-ubuntu-16-04-with-a-ppa-498977.shtml>

Wind River revs up its connected car software and services

Wind River announced "Helix Chassis" connected car software, featuring Linux-based "Cockpit," VxWorks-based "Drive," IoT device access, and cloud services.

Intel software subsidiary Wind River has been building up its portfolio of automotive oriented software for several years. The results of this process have ranged from safety critical, real-time control software based on its venerable VxWorks RTOS, to an in-vehicle infotainment (IVI) platform based on its widely respected embedded Linux distribution, to a recently introduced Helix Cloud services platform. This week, the company announced that this assortment of software, development tools, and services for the "connected car" market, have become a new Wind River product

suite, called “Wind River Helix Chassis.”

Source: <http://linuxgizmos.com/wind-river-revs-up-its-connected-car-software-and-services/>

Lubuntu 16.04 LTS (Xenial Xerus) Has Been Ported to Raspberry Pi 2, with LXQt

Built with the Ubuntu Pi Flavour Maker tool, which we've introduced you to last month, made by the Ubuntu MATE team, the Raspberry Pi 2 port of the upcoming Lubuntu 16.04 LTS (Xenial Xerus) operating system is currently in development stage; but at least we see some progress with the implementation of LXQt in Lubuntu.

"A nice experiment made by wxl from the Lubuntu QA Team: running Lubuntu Xenial Xerus on a Raspberry Pi 2, with LXQt desktop. Made with Ubuntu Pi Flavour Maker," said Rafael Laguna in the brief announcement. "And that's all. Enjoy Lubuntu in your new Pi. Remember this is just an experiment, it may be unstable."

If you want to test the Lubuntu 16.04 LTS (Xenial Xerus) operating system on your Raspberry Pi 2 single-board computer, you will have to download the experimental image, install it on an SD card, upgrade to the Xenial branch, and then follow the Lubuntu Wiki guide to install the LXQt packages.

Source: <http://linux.softpedia.com/blog/lubuntu-16-04-lts-xenial-xerus-has-been-porting-to-raspberry-pi-2-with-lxqt-498995.shtml>

Canonical's Ubuntu Day Event Brings Ubuntu Linux to a City Near You

The event is called Ubuntu Day; it is organized by Canonical and its partners around the globe, and it aims to promote and advance the adoption of the Ubuntu operating system and its GNU/Linux technologies amongst local markets. It is Canonical's new way of making people aware of Ubuntu's capabilities.

Ubuntu Day is a local event and an opportunity for people from all over the globe to meet the world's best free operating system, as well as to learn about its features, including Ubuntu Cloud products like Juju, Charms and MAAS, as explained by various Ubuntu experts.

"I've been busy planning our first ever Ubuntu Day. Ubuntu Day is a local event organised with our partners to support awareness and adoption of Ubuntu technologies in local markets," said Marcin Kierdelewicz, Global Channel Business Development at Canonical.

Source: <http://news.softpedia.com/news/canonical-s-ubuntu-day-event-brings-ubuntu-linux-to-a-city-near-you-499007.shtml>

Phoenix OS, an Alternative to Remix OS

Remix OS is an Android operating system made to run on any 32-bit or 64-bit PC, powered by GNU/Linux technologies and based on the Android-x86 project.

Just like Remix OS, the new Phoenix OS comes in two flavors, one for Android devices and one for x86 PCs. It includes key productivity features [...] such as a Start Menu, multi-window support, and a Taskbar.

Phoenix OS is designed to be user-friendly, flexible and powerful, while being as lightweight as possible on your computer. It's designed for large screens, and offers support for mouse and keyboard devices.

Source: <http://news.softpedia.com/news/introducing-phoenix-os-an-alternative-to-remix-os-and-android-x86-499017.shtml>

Ubuntu Touch Still Has the Best and Most Complete App Permissions

App permissions is a feature that's now present in pretty much all the major mobile operating systems, but Ubuntu has the best

implementation available right now.

The Ubuntu operating system is one of the first to have introduced incremental app permissions, but because it wasn't made available worldwide like all the others, this particular feature has gone by unnoticed, even if it promised much better user control.

Canonical was implementing detailed app permissions almost two years ago, at a time when it was only a dream for some of the other distros. For example, Android 6.0 Marshmallow is finally making this feature available for users. People will know that a certain application will want to access some Android feature, but it's only a general request.

An Android app will say that it needs access to your contacts, and you only say yes or no. In Ubuntu, that particular option is much more refined. Before the user makes that choice, the context needs to be known and explained.

Source: <http://news.softpedia.com/news/ubuntu-still-has-the-best-and-most-complete-app-permissions-499028.shtml>

Why Linux gamers shouldn't preorder the Oculus Rift

News of Oculus Rift preorders is bittersweet at best for Linux users. The first consumer version of the Rift will be Windows-only, with Linux support a vague promise for the future. But it wasn't always this way.

In the beginning, Linux support was something Oculus was actively developing. The original Oculus SDK released in mid-2013 (Version 0.2.3) added support for Linux. Red Hat's Richard Jones blogged about his experience with it in August of that year: "Surprisingly, using Linux is not a problem at all," he wrote, finding it offered a basically plug-and-play experience on Linux. "How the world has moved on," he wrote.

Then Oculus changed its mind. In a May 2015 blog post titled "Powering the Rift," Oculus came right out and said it was prioritizing Windows support over all else.

Source: <http://www.pcworld.com/article/3023400/linux/linux-gamers-shouldnt-preorder-the-oculus-rift-with-linux-development-on-hold.html>

You Can Now Install Android Apps Directly From Google's Search Results

Artem Russakovskii reports that some Android users are now able to install Android apps directly from the mobile Google search results. Typically, the searcher would be taken into the Google Play interface to review the app details and then click install from the Google Play app. But it seems Google is testing bypassing that step by allowing some Android users to install Android apps directly within the mobile results. This should help app developers get more app downloads, if it does indeed go live for all Android users.

Source: <http://searchengineland.com/you-can-now-install-android-apps-directly-from-googles-search-results-240461>

Serious Linux Kernel Vulnerability Patched

A patch for a critical Linux kernel flaw, present in the code since 2012, is expected to be pushed out today. The vulnerability affects versions 3.8 and higher, said researchers at startup Perception Point who discovered the vulnerability. The flaw also extends to two-thirds of Android devices, the company added.

The vulnerability, CVE-2016-0728, lives in the keyring facility built into the various flavors of Linux. The keyring encrypts and stores login information, encryption keys and certificates, and makes them available to applications. In a report published by Perception Point, researchers said the vulnerability is a reference leak that can be abused to ultimately execute code in the Linux kernel.

Source: <https://threatpost.com/serious-linux-kernel-vulnerability-patched/115923/>

Skype For Android Updated With New Features

Skype's mobile apps on major platforms already provide a long list of features that include group instant messaging, file sharing, while group video calls will soon be coming to mobile as well. Today it's rolling out an update for Skype for Android which adds a couple of new features to this app, like the ability to open Office documents and schedule a Skype call. It's already possible to schedule Skype calls using Outlook but on Skype for Android it's now even possible to schedule calls in Outlook from Skype. Users can also opt for another calendar app to schedule the call if they don't use Outlook. Then it's just a matter of creating an event and sending out the invite to the other party, and they'll never miss a call again.

Source: <http://www.ubergizmo.com/2016/01/skype-for-android-updated-with-new-features/>

Motorola posts Android 6.0 release notes for Moto G (2nd Gen)

Looks like Motorola will soon start rolling out the Marshmallow update to its second-generation Moto G smartphone. The company has posted Android 6.0 update release notes for the device on its India support website. The handset was launched in September 2014 running Android 4.4.4 (KitKat) out-of-the-box. Although it started receiving the Android 5.0 Lollipop update in January 2015, Android 5.1 hasn't hit the device yet. So, turns out the phone will directly jump from Android 5.0 to Marshmallow. This comes just a day after the Motorola Moto G Turbo Edition started receiving the Android 6.0 update in India.

Source: http://www.gsmarena.com/motorola_posts_android_60_release_notes_for_moto_g_2nd_gen_-news-16180.php

Ubuntu Linux tablet will turn into a makeshift desktop

Want to use your mobile device as a desktop, but would rather not go the Windows route? BQ might have just what you're looking for. The Spanish device maker is teasing the launch of an Ubuntu-based tablet that touts Convergence, a feature that turns your mobile Ubuntu gear into makeshift PCs. If you can scrounge up an external display, mouse and keyboard, you'll have your own little Linux workstation. BQ isn't saying much about the device itself, but OMG Ubuntu claims that it'll be an Ubuntu version of the Aquarius M10, a 10-inch budget model with a quad-core MediaTek processor, 2GB of RAM and a 1,280 x 800 screen. It won't be a powerhouse, then. However, you won't have to wait too long to get the full scoop. The company will unveil its Ubuntu slate at Mobile World Congress in late February, and its availability likely revolves around the release of Ubuntu 16.04 Xerus Xenial (which touts Convergence) in late April.

Source: <http://www.engadget.com/2016/01/20/ubuntu-linux-tablet-with-desktop-mode/> >

Linux Foundation causes uproar by quietly removing community representation from its board

The Linux Foundation, a trade association formed nine years ago to represent and promote open-source operating system Linux, will no longer allow community members to elect or be elected to join its board of directors.

The majority of the organisation's board is made up of directors representing its nine platinum members – including Oracle, Fujitsu, HP, Intel, IBM and Samsung – which donate \$500,000 per year.

Traditionally, the remaining directors were chosen by a few gold and silver members – who pay \$100,000 and up to \$20,000 per year, respectively – and two people elected among the organisation's vast pool of individual members, who pay \$99 per year.

By allowing individual members onto the board, the idea was to provide community representation in decisions that impact all of

the Linux Foundation's stakeholders, as opposed to just its 261 corporate members.

Source: <http://www.information-age.com/industry/software/123460821/linux-foundation-causes-uproar-quietly-removing-community-representation-its-board>

Ubuntu Phones Will Get a New Music App After the OTA-9 Update

It looks like the Ubuntu QA team has found a nasty regression which causes some problems with the interaction between the Camera app and the Content Hub component.

Nevertheless, the issue will most probably be fixed before the OTA-9 gets out. Otherwise, the team will have to push an OTA-9.5 hotfix shortly after the release of OTA-9. In the meantime, the Ubuntu Touch devs are working on the new Music app, which promises lots of attractive features, but it looks like it will be released after the OTA-9.

Source: <http://news.softpedia.com/news/ubuntu-phones-will-get-a-new-music-app-with-lots-of-features-after-the-ota-9-update-499182.shtml>

Kickstarter is launching an app for Android

Kickstarter is finally releasing an app for Android, launching the software on the Google Play Store today. The app will let users browse and back projects just like they do on the web, and has a number of features for spotlighting campaigns — including an activity feed combining updates on projects backed by users and by their friends. There's no way for project creators to manage their campaigns using the app unfortunately, but Kickstarter promises this functionality is coming "soon."

The company says the app's launch aims to capitalize on a year of international expansion, particularly in Europe where Android

tends to have a larger market share than in the US.

Source: <http://www.theverge.com/2016/1/21/10806626/kickstarter-android-app>

Snap-Happy Trojan Targets Linux Servers

Security researchers at Dr.Web on Tuesday revealed details of the Trojan Linux.Ekoms.1, which takes screen shots and records audio to acquire sensitive and personal information, mostly from Linux servers.

Malware for Linux is becoming more diverse and includes spyware programs, ransomware, and Trojans designed to carry out distributed denial-of-service attacks, according to Dr.Web.

Researchers did not assess the severity of the threat once the malware infects computers.

The disclosure also did not provide details on the source of the malware or the extent of its threat to servers or desktop computers running the open source OS.

Source: <http://linuxgizmos.com/emulator-brings-x86-linux-apps-to-arm-devices/>

Why Android's \$31 Billion in Revenue May Not Be as Big as It Seems

Google rivals, partners, investors and analysts have long wondered how much money the Internet giant makes from Android, the mobile-operating system it gives away for free. A lawyer for Oracle Corp. last week offered some tantalizing clues.

The lawyer told a federal judge on Jan. 14 that Android generated \$31 billion in revenue and \$22 billion in profit, Bloomberg News reported.

Those numbers look big. In fact, they may be small, given Android's

reach as the world's most-popular mobile-operating system.

“\$31 billion seems smaller than we would have anticipated,” said Neil Doshi, an analyst at Mizuho Securities USA Inc. “But you can think of this as incremental revenue that Google would have missed out on if they hadn’t been early to invest in mobile and pushed the Android ecosystem forward.”

Source: <http://blogs.wsj.com/digits/2016/01/22/why-androids-31-billion-in-revenue-may-not-be-as-big-as-it-seems/>

Hands-on with Kali Linux Rolling

Kali Linux (the successor to BackTrack), well known as one of the premier distributions for digital forensics and penetration testing, announced a new release. This by itself already qualifies as very good news.

With this release, Kali-Rolling (2016.1), Kali Linux is now officially a rolling distribution. Kali was previously based on the Debian stable distribution, and basically had to track the major release cycles of Debian with their own major releases. Now Kali is based on the Debian testing distribution, so it is continuously updated. The Kali developers have also added continuous notification and updates of the penetration testing tools that they add to Debian to create the Kali distribution.

To top it all off, the new distribution is UEFI compatible, and installed without any problem on the systems I have tried so far. This is really the best news of all for me, because I have spent huge amounts of time fighting to get the previous Kali distributions properly loaded and configured on UEFI systems (NOT in Legacy boot mode).

Source: <http://blogs.wsj.com/digits/2016/01/22/why-androids-31-billion-in-revenue-may-not-be-as-big-ashttp://www.zdnet.com/article/hand-on-with-kali-linux-rolling/-it-seems/>

SCaLE 14x, day 1: Shuttleworth delivers the grand

vision for Ubuntu

Shuttleworth praised the differences and diversity in the Ubuntu community. He said the differences in what people are doing and their motivations is what makes the Ubuntu community strong. "There is a great misconception that Ubuntu is what I want," he said. "It's not. Ubuntu is the son of what many different diverse groups want. What we struggle and fight for is the framework for collaboration that enables people to get what they want."

He then talked about how Ubuntu is innovating with changing times: they developed Snappy to offer a much more secure, sandboxed Ubuntu experience to enable people to use Ubuntu in a variety of devices such as drones, Internet of Things, artificial intelligence, smart cars, etc.

During the Q&A session, someone asked about people taking Ubuntu and creating their own stuff with it, by which I assume he meant derivatives. Shuttleworth said that he thinks that's a good thing; people can do whatever they want to do with Ubuntu. Then he also mentioned that they are trying to avoid Snappy having the fragmentation Android is experiencing, because, irrespective of where you are running Snappy Ubuntu Core, you are running the same code everywhere.

Source: <http://www.cio.com/article/3025630/linux/scale-14x-day-1-shuttleworth-delivers-the-grand-vision-for-ubuntu.html>

Debian 8.3 (Jessie) Officially Released

The Debian developers have issued another update for the OS. It's only for maintenance, and no new features have been implemented, but that's to be expected with a regular update. The initial launch for Debian 8.0 was all the way back in April 2015, so three major upgrades in less than a year seems to be a great track record.

Interestingly enough, Debian 8.x is also an LTS release, and its makers have already said that they are going to provide support for it until 2020, which is a really long time. Most likely, the current

pace of updates for Debian 8.x will slow down after the first couple of years.

Since Debian 8 (Jessie) has been such a popular choice, a lot of developers chose it to base their own distros. In fact, the latest version of SteamOS “Brewmaster” is using Debian 8.2 as its base, and it’s likely to upgrade to the new one really soon.

Source: <http://news.softpedia.com/news/debian-8-3-jessie-officially-released-499338.shtml>

CarPlay vs Android Auto: Different approaches, same goal

Under the hood, CarPlay and Android Auto seem pretty similar. They're both "casted" interfaces that process and render a computing environment on a smartphone and then send that interface to the car display, basically using it as an external touchscreen monitor. The interfaces are wildly different though, with CarPlay sticking with the tried-and-true grid of apps, while Android Auto displays a notification dashboard and uses a tabbed interface. CarPlay's original name of "iOS in the car" pretty much nails Apple's goal here. CarPlay is basically the iOS smartphone/tablet interface enlarged 400 percent and simplified for car usage. The biggest change is the status bar, which morphed into a side-mounted bar showing the time, connectivity, and the on-screen home button. The icons are the star of the show here—they're big, bright, obvious, and easy to hit.

Other than the name, Android Auto doesn't take much from its smartphone heritage. Android's bottom system bar, which normally only houses the back, home, and recent navigation buttons, is now a tabbed interface for the various sections of Android Auto. Rather than the paradigm of apps with icons that whisk you away to a new location in the software, Android Auto is broken up into five sections. Apps can take over some of those sections.

Source: <http://arstechnica.com/gadgets/2016/01/carplay-vs-android-auto-different-approaches-same-goal/>

Did Linus protect the Linux Foundation from the Social Justice Warriors?

The recent news that the Linux Foundation had changed its policy on community representation caught many people by surprise. Most of the first reactions seemed assume that it was done to somehow promote corporate interests over community interests. I even saw some blog that hinted that Microsoft was involved somehow. Talk about conspiracy theories. Sheesh.

But is that really why the policy was changed? Or was it done to avoid an influx of Social Justice Warriors? And in particular one person by the name of Karen Sandler who apparently has a reputation as an SJW, and who may have contributed significantly to the financial problems of the GNOME Foundation by spending oodles of cash on an unnecessary women's outreach program.

Source: <http://jimlynch.com/linux-articles/did-linus-protect-the-linux-foundation-from-the-social-justice-warriors/>

#

Command & Conquer: Bind9

Lucas Westermann

After the Christmas holidays, it's usually time for me to take stock of my work equipment (computers and servers), and see what I can do while I'm still on holidays to make life simpler. This time around, I wanted to configure an internal Bind9 DNS server, so I can use internal domains for accessing servers, virtual machines, NAS, other computers, and so forth. Since my test area is Ubuntu 15.10 on Vagrant, I'll cover all the steps (including the steps for Vagrant).

Step 0: Configure Vagrant box

If you're setting up Bind DNS on a standalone device, or on a virtual machine that is already configured, you can skip this step. Personally, I think Vagrant is a wonderful way to test configurations, but I will be migrating the Bind9 DNS server to an Intel NUC, once the new skylake models are available.

```
vagrant box add ubuntu/wily64
```

This command adds the official Wily Werewolf 64-bit Vagrant Box to your system. You can skip this and go straight to the init, but I prefer to have local copies of certain base boxes, as I spin up a lot of vagrant boxes.

```
vagrant init ubuntu/wily64
```

This will initiate a Vagrantfile that uses the ubuntu/wily64 box from above. If you haven't added the box using the box add command, it should work anyway (as this is an official image). If not, you may need to supply the URL (see the Further Reading section for a link to the webpage).

You'll also want to set up a private network IP (if you plan to actually use the DNS). To do so, edit the Vagrantfile, and edit the line that reads 'config.vm.network "privatenetwork"'. *The IP can be pretty much anything you'd like (provided it isn't already in use). If you're going to use the DNS outside the host computer, you'll need to instead set up a publicnetwork.* Since this is a VM, I stuck with a host-only network, as, if my computer isn't running, neither is the VM (nor do I need to have access to the test DNS from anywhere else).

Lastly, you'll want to start the Vagrant box with: `vagrant up`

Step 1: Installing

I recommend installing 3 packages - bind9, bind9-docs, and dnsutils. Bind9 and the -docs package are important, as they will be the actual DNS server. Dnsutils contains a bunch of useful tools for debugging DNS.

Step 2: Basic Configuration

Open/edit the correct file using the following command:

```
sudo vim /etc/bind/named.conf.options
```

If you'd prefer to use something like emacs or nano, substitute vim for that. If you're doing this in a graphical environment, you're welcome to use anything you prefer. If working in Vagrant, you'll be limited to CLI. I'll also be referring to line numbers. If your vim isn't displaying the numbers, you can toggle them with the command `":set number"`.

Step 2a: Forwarders

Since we're focusing on internal connections, any outside IPs (which will be requested from this server as well) can be safely called from existing DNS. This is what Bind9 calls "forwarders" - they are essentially the IP addresses of the DNS that should be checked, if the domain isn't contained in the local copy. I'd

recommend using the Google DNS, but if you want to use your ISP's, you simply need to know the IPs of them. Find lines 13-15 (that starts with `// forwarders {}`), and make it look like this:

```
forwarders {  
    8.8.8.8;  
    8.8.4.4;  
};
```

The big change here is replacing line `0.0.0.0;` with `8.8.8.8;` and `8.8.4.4;` (the IPs for Google's DNS). Also, make sure you uncomment the entire block. If you're using vim, use a quick 'Esc' (to leave edit mode), and then save and quit with: `:wq`

Step 2b: Setting up zones

You'll need to open a new configuration file:

```
sudo vim /etc/bind/named.conf.local
```

This file should be largely empty (on a fresh install, at least). Before we can make any edits, we need to know what our IP address is. Typically, it's something like `192.168.0.X`, or `192.168.1.X` (for internal networks). To find out what your IP address is, you can run the command `'ip addr'`. If you're running Vagrant, you'll have a few different interfaces - find the one that uses the private or public network IP you added to the Vagrantfile. If you're at a physical computer with multiple internet connections, I'll have to assume you know which IP to use. It's important to note only the first 3 sections of the IP (so ignore the last number).

Also, select a local domain you'd like to configure. I selected `lswest.local`, simply because it won't interfere with existing domains (if you use `google.com`, for example, you will not be able to reach the google homepage).

Now, in the `named.conf.local` file, you'll need to add the following lines:

```
zone "lswest.local" {
    type master;
    file "/etc/bind/db.lswest.local";
}

zone "0.168.192.in-addr.arpa" {
    type master;
    notify no;
    file "/etc/bind/db.192";
};
```

The section that reads “in-addr.arpa” is required for a DNS IPv4 reverse lookup. For more information, see the wikipedia link in Further Reading. Type indicates whether the DNS is a master (primary), or a slave (secondary). While this is a complicated distinction to fully understand, for the time being it’s safe to assume any local Bind9 DNS zone will be a master. The ‘notify no;’ on the internal IP indicates whether or not zone notifications are to be sent to slaves when changes occur. As this is a master without slaves, it’s not technically necessary. However, since this is for all IP addresses in the network, it’s useful to include (to avoid issues down the line).

Now we need to create the db files we refer to in the file. To start with, I’ll focus on the local domain.

```
sudo cp /etc/bind/db.local /etc/bind/db.lswest.local
```

Now we’ll need to open and edit the file:

```
sudo vim /etc/bind/db.lswest.local
```

The file should look like the following:

I'm going to create 2 subdomains - nas (fqdn: nas.lswest.local), and web (fqdn: web.lswest.local). One will point to the physical NAS I have in the network, and the other will point to the vagrant box I use for web development.

I'll also set up a CNAME entry - vagrant, which I'll point at the web subdomain.

The file will then look like this (from line 16 onwards):

```
; A Records

nas      IN      A       192.168.0.4
web      IN      A       192.168.33.10

; CNAME Records

vagrant  IN      CNAME   web.lswest.local.
```

The lines that start with a semi-colon are comments, and serve to just make the file more readable. As you can see, you point the CNAME to the fqdn of another server. As you can probably figure, this is because CNAMEs are simply aliases.

Step 3: Reverse Lookup

This step is optional. If you're not planning to do reverse DNS checks on IPs (to find domains), you can skip this. However, it's good practice, and may come in useful.

First, we must copy the default db.127 file:

```
sudo cp /etc/bind/db.127 /etc/bind/db.192
```

Once done, open the file. It will look similar to the db.lswest.local file from above. We need to make the following changes:

1. Line 5: change "localhost." to the fqdn from earlier.
2. Line 5: Change root.localhost to the email you used earlier.

3. Line 12: change “localhost.” to the fqdn from earlier.
4. Delete line 13 (the pointer). We’ll be replacing this entirely later.

We now need to add the entries. After line 12 (the NS line), add the following line:

```
4          IN          PTR          nas.lswest.local.
```

The 4 is the last number of the IP address from db.lswest.local. Since this is a reverse lookup for 192.168.0, we need only the last digit. It is also why I left out the web value, as the IP is 192.168.33.10 - if I wanted to reverse lookup this, I’d need to set up a zone for 192.168.33. However, as my Vagrant installs don’t generally survive long, I don’t find the effort necessary. The CNAME doesn’t get a pointer, as it’s not assigned to an IP.

Save and close the file (:wq in vim).

Step 4: Run server, and connect

It’s now time to start the Bind9 server. To do so, run the following:

```
sudo service bind9 start
```

Now you need to enter the DNS on the machine you want to use it from, this could be done in the network manager in Ubuntu, or wherever you may configure a DNS on the OS of choice.

Use the IP for the server we configured earlier.

Step 5: Testing

Once your DNS is configured, you should be able to connect to one of your servers using the domain name. If your browser initiates a search instead of pulling up the webpage, make sure you manually add http:// before the domain.

If the domain doesn’t resolve properly, you can check it using dig.

The command for that looks something like this:

```
dig nas.lswest.local @192.168.15.3
```

The @ indicates the DNS to check. If you've already changed your DNS IP, it shouldn't be necessary. If, however, you're not getting the results you expect, it may be useful.

Step 6: Logging

If you run into issues, you'll want to enable logging. AppArmor technically has a rule for bind9 already, but the folder in /var/log doesn't exist. You'll want to do the following:

```
sudo mkdir /var/log/named/  
sudo chown bind:root /var/log/named/  
sudo chmod -R 775 /var/log/named/
```

That should result in a log file (once the service was restarted). If not, you'll want to check the third link in the Further Reading section.

I hope this article is interesting for anyone who may, like me, be a web developer (or just simply run a lot of devices on their internal network). If you enjoyed the article, and have any questions, issues, or suggestions, feel free to reach out to me at lswest34 + fcm@gmail.com.

Further Reading

<https://atlas.hashicorp.com/ubuntu/boxes/wily64> - URL to the Wily64 box.

https://en.wikipedia.org/wiki/Reverse_DNS_lookup - Reverse Lookup wikipedia article.

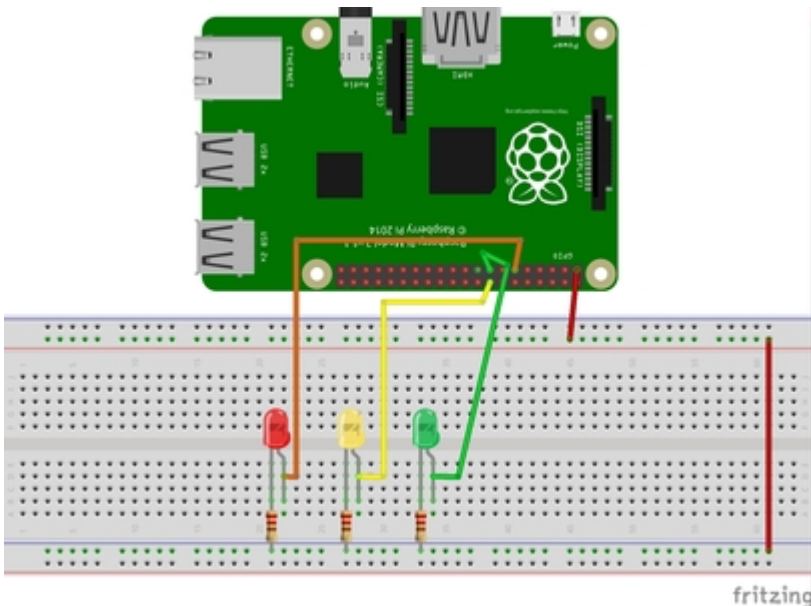
<http://askubuntu.com/a/469867> - Permission errors with Bind9

FCM 105 - How To - Python in the REAL World - Part 63

By G.D. Walters

Welcome back to our Real World programming series. Last time, we programmed the RPi to turn on and off an LED when a button was pressed. Very simple, but this got us started. This month, we will do another simple project, a traffic light simulator using 3 LEDs, one Red, one Yellow and one Green. For the most part, the code is very similar to what we used last month, so you shouldn't have any problems. If you have any questions, I suggest you look at last month's article which should answer any of your concerns.

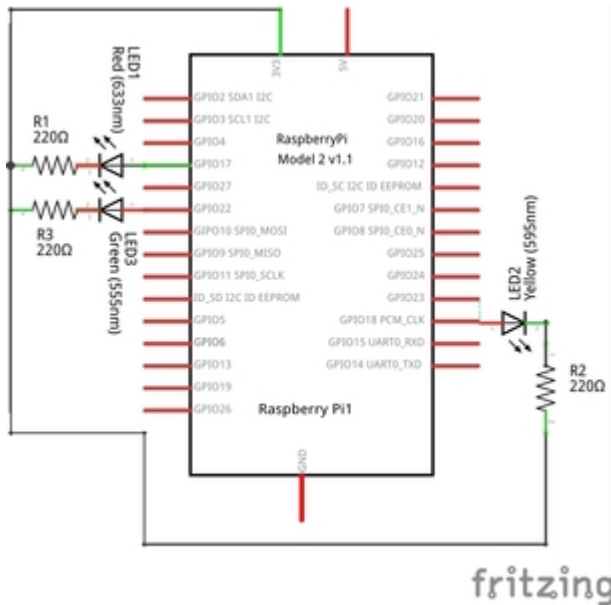
First, let's look at the schematic and the breadboard.



Notice that the wire colours correspond to its 'job', with the exception of the orange wire. The red wires supply 3.3 volts. The green wire controls the green LED, the yellow wire controls the

yellow LED, and the orange wire controls the red LED, since the red wire is already being used.

You should also know that the pins being used should work on a RPi v1a/b, RPi v1b+ and RPi v2b.



The red LED cathode is connected to GPIO 17 (Physical pin 11), yellow LED cathode is connected to GPIO 23 (Physical pin 16), and the green LED cathode is connected to GPIO 22 (Physical pin 15). The Anodes of all three LEDs are connected to one side of 220 Ohm resistors and the other sides are connected to a common 3.3 VDC. We don't need the ground voltage for this particular project.

Since I've driven only in the U.S. I've based the simulation on our traffic patterns. Long red light (10 seconds), green light is usually shorter than the red light time (8 seconds), and the yellow light is fairly short (2 seconds). These values are currently hard coded in the time.sleep() function calls. Feel free to change them as you see fit.

Now let's start working through the code.

```
#!/usr/bin/env python

# Traffic Light Simulator
# Written by G. D. Walters
#-----
import RPi.GPIO as GPIO
import os
import time
import datetime
#-----

RedLedPin = 17
YellowLedPin = 23
GreenLedPin = 22
```

The first 9 lines are our standard import statements and a few comment lines. The next three lines define the BCM pin numbers for our LED pins. If you wish to use physical pin numbers, be sure to change the `GPIO.setmode()` line in the next routine.

```
def setup():
    GPIO.setmode(GPIO.BCM)           # Numbers GPIOs by pin number

    GPIO.setup(RedLedPin, GPIO.OUT)   # Set the 3 LedPins as output
    GPIO.setup(YellowLedPin, GPIO.OUT)
    GPIO.setup(GreenLedPin, GPIO.OUT)

    GPIO.output(RedLedPin, GPIO.HIGH) # Turn off LEDs
    GPIO.output(YellowLedPin, GPIO.HIGH)
    GPIO.output(GreenLedPin, GPIO.HIGH)
```

As I mentioned above, the `GPIO.setmode` needs to be changed from 'GPIO.BCM' to 'GPIO.BOARD' if you want to use the physical pin numbers instead of the BCM numbers in our definitions. The next three lines set the LED pins as output pins, and then turn all three LEDs off to start the program by setting the output value to HIGH.

```
def LEDLoop():
    print "Green On..."
```

```

GPIO.output (GreenLedPin, 0)
time.sleep(8)
GPIO.output (GreenLedPin, 1)
print "Green Off..."
print "Yellow On..."
GPIO.output (YellowLedPin, 0)
time.sleep(2)
GPIO.output (YellowLedPin, 1)
print "Yellow Off..."
print "Red On..."
GPIO.output (RedLedPin, 0)
time.sleep(10)
GPIO.output (RedLedPin, 1)
print "Red Off..."

```

The LEDLoop routine is very simple:

1. We print on the console "<color> On...",<pin>,#
2. Turn the LED on by setting the output value to 0 or low,
3. Sleep for a designated period,
4. Set the output value of the pin back to 1 or high,
5. Then print that the LED is now off.

This is then duplicated for the Yellow and Red LEDs. The loop() routine simply forces the LEDLoop() routine to be called over and over until the user hits <CTRL> C on the RPi keyboard.

```

def loop():
    while True:
        LEDLoop()

```

The destroy routine and the main loop are the same as last month. We simply set all the LED pins to high, turning them off, and then call GPIO.cleanup().

```

def destroy():
    GPIO.output (RedLedPin, GPIO.HIGH)    # led off
    GPIO.output (YellowLedPin, GPIO.HIGH) # led off
    GPIO.output (GreenLedPin, GPIO.HIGH)  # led off

```

```
GPIO.cleanup()                                # Release resources

if name == 'main':    # Program start from here
    setup()
    try:
        loop()
    except KeyboardInterrupt:    # When 'Ctrl+C' is pressed
        destroy()
```

I'm not sure that we could make a much simpler program to do what we need to do.

If you want, you could duplicate the 3 LEDS and make an intersection simulation before next time.

Next time, we'll have something that is a bit more challenging. Until then, happy programming.

Greg

LibreOffice, Part 56, Export to PDF

By Elmer Perry

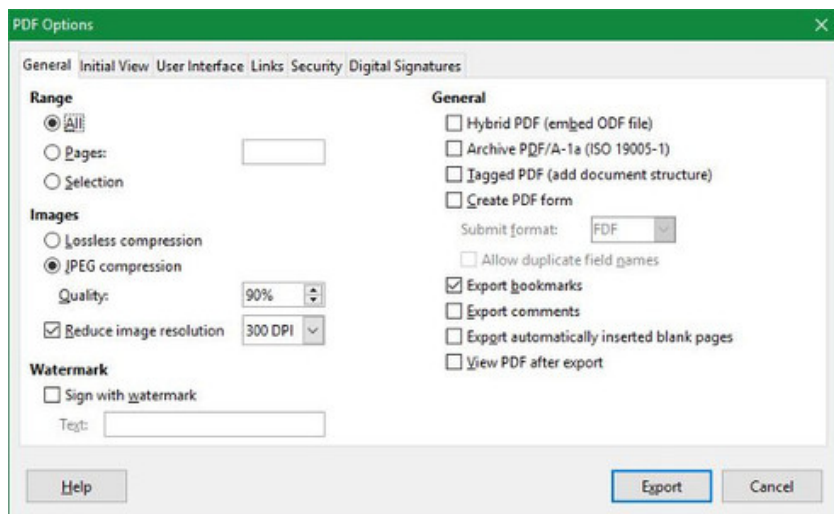
Portable Document Format (PDF) is a handy way to share documents when you need to control what the reader can do with the content. You can make the document where others cannot change or even comment on the contents of the document. You can secure the document so that the reader cannot even read the document without a password. You can create electronic forms for collecting data, and you can create document consistency by embedding the fonts used in the PDF document. Most importantly, PDF is portable, working on most platforms and in most web browsers.

LibreOffice allows you to export most documents as PDF, including text documents, spreadsheets, drawings, and presentations. There are a lot of options for the exporting of LibreOffice documents to PDF – today is an overview of these options. In later articles, we may look at more specific applications and uses.

PDF Export

You can export a document as a PDF using the last selected options through the Export Directly as PDF button on the default toolbar. But, in order to change the options before saving the document, it is much better to use the File > Export to PDF menu option. This displays the PDF Options dialog. The dialog gives you six tabs with all the options for exporting your document as a PDF.

General Tab



The General tab gives you most of the common options.

The Range options allow you to specify what content is included in the PDF. You have options for All, Pages, or Selection. All will export the entire document into the PDF, while Pages allows you to select what pages are exported. You can enter a range of pages (1-6), individual pages separated by a semicolon (3;6;8), or a combination of ranges and pages (1-6;3;10-12;40;52). Selection will export only the currently selected contents of the document.

The Images options tell LibreOffice how you want it to handle the image quality. You can choose the Lossless compression option, but only if you have a good reason (eg, your document is a photo art journal). Lossless compression will greatly increase the file size. JPEG compression is a better choice, and a quality of 90% works for most photo images. The image resolution will depend on the end media for your PDF. If you are designing for online screen viewing a DPI of 75 or 150 is good. However, if there are plans for printing, a DPI of 300 or greater is better. Keep in mind that a higher DPI means a bigger file size.

The Watermark option is simple. Checking this option will create a transparent overlay on each page of the text in the text box. Use it to indicate a draft or sample.

The General options relate to the overall structure of the PDF document.

The Hybrid PDF option embeds the Open Document Format (ODT, ODS, ODP, etc) into the PDF document. This allows you to directly open and edit the PDF document in LibreOffice. After making changes, you can save it as a LibreOffice document or export it back to a PDF. Selecting this option disables the Range options since it will embed the entire document.

The Archive PDF / A-1a option embeds all the fonts used in the document in accordance with ISO 19005-1. This is a good option for creating archival documents or for preserving the use of special fonts or layouts. This is helpful if you need to print from a computer that does not have the same font set as the one you created the document on.

The Tagged PDF option allows you to create a tagged PDF document. Tagged PDFs contain document structure information and can allow the document to reflow better on some screens. The embedded structure is also used by some screen readers. A full discussion of tagged PDFs is beyond the topic of this article, but keep in mind that all that document structure information increases the size of your document.

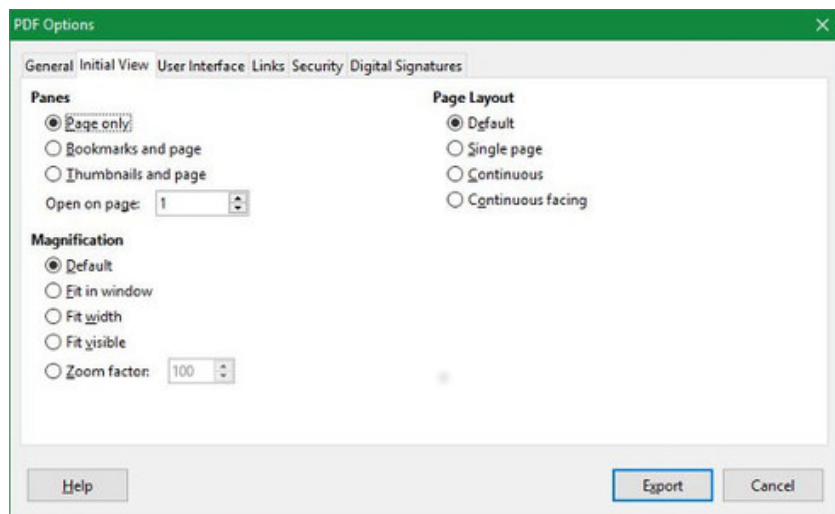
The Create PDF form option allows you to create a PDF form that people can fill out on a computer. This type of document could help you to collect data for use in other places. The Submit Format allows you to choose how the form data is stored. There are four options:

1. PDF – the whole document with the information filled in is saved as a PDF.
2. FDF (Forms Data Format) – only the data for the controls in the form are saved.
3. HTML – form data is saved in HTML format.
4. XML – form data is saved in XML format.

There is also a checkbox to allow for duplicate file names in the forms controls.

The Export bookmarks option will create bookmarks for table of contents and outline paragraphs. If you are curious about the outline paragraphs, you change their setting at Tools > Outline Numbering. You can also export LibreOffice comments as PDF notes in the document, as well as exporting automatically inserted blank pages. Finally, View PDF after export will open the newly created PDF after it is exported. This will allow to you see how the finished document looks.

Initial View Tab



The Initial View tab lets you set how the document will display when it opens.

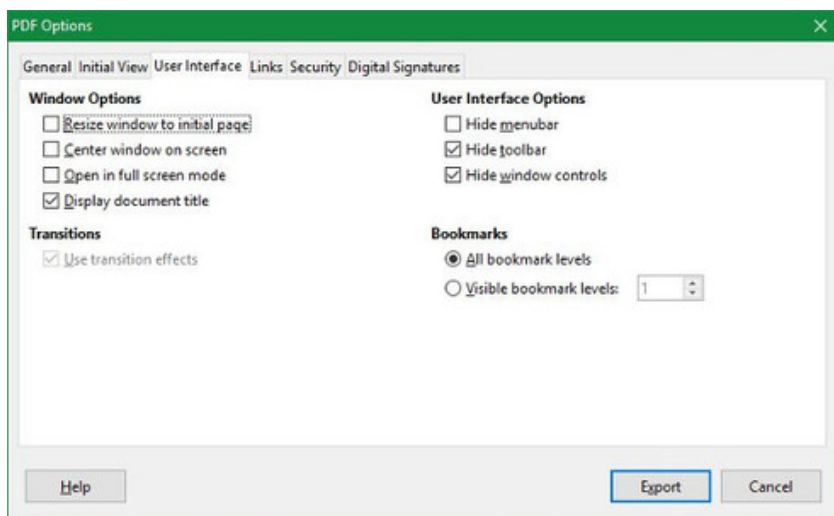
The Panels options allow you to select which reader panes will open when you open the document. You have the options to open the thumbnails and page, bookmarks and page, or just the page itself. You can even set the document to open on a page other than page 1 by using the Open-on-page setting.

The Magnification options let you control the magnification of the document when it opens. Default just uses the default magnification setting of the reader, while other settings allow for whole page (Fit in window), page width, or zoom to fit the text and graphics in the window (Fit visible). You can also manually define a custom Zoom

factor.

The Page Layout option determines how the pages will display. Again Default just uses the reader's default settings; however, you can chose to have it display just one page at a time. When you scroll to the end of a page, it will jump to the next page. If you chose instead to select the Continuous option, when you reach the bottom of one page, the top of the next page will start scrolling as though the pages were fixed together. The Continuous Facing works the same way as continuous, but displays two columns of pages like an open book.

User Interface Tab



The User Interface tab controls the options for the way the actual window responds when the document is opened.

The Window Options control how the window will respond to the opened document. You can have it fit to the size of the first page, center the window on the screen, or open the window in fullscreen mode. You can also chose to display the document title in the title bar.

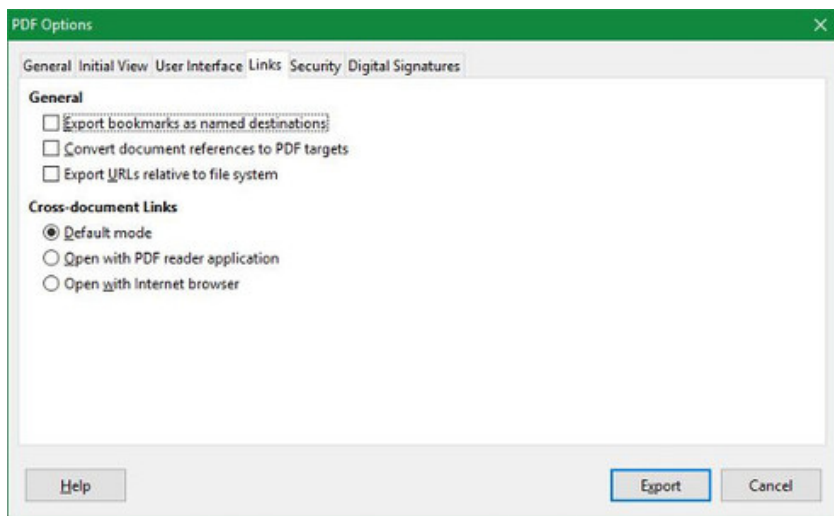
The Transitions option relates only to the export of a presentation to PDF. If you select the option, the LibreOffice page transitions are

exported into the PDF document.

The User Interface options control whether to hide the menus, toolbar, and reader's control tools. You may chose to hide some or all of these depending on the way you want the document used. Keep in mind that the user can reverse all these options.

The Bookmark option allows you to control whether all or just some of the bookmark levels are exported to the document. You can select to export all or specify the level to which to export the bookmarks.

Links Tab



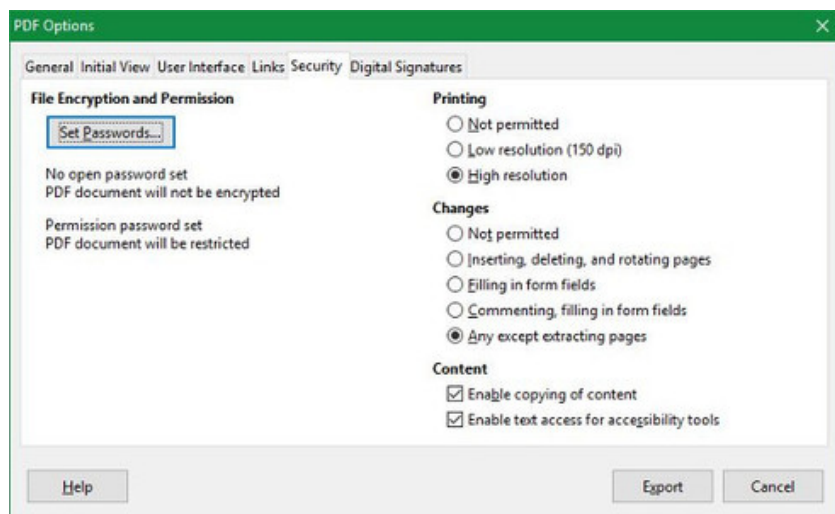
The Links tab sets how internal and external links are handled within the document. All of these options assume the reader is capable of handling the different options.

The General options control how links are referenced. Exporting the bookmarks as named destinations allows other documents to directly reference the bookmark. When you convert document references to PDF targets, the PDF will reference a PDF document of the same name as the referenced document. This setting assumes you will convert all referenced documents to PDFs. If you want to move a document with external links to other computers, you can

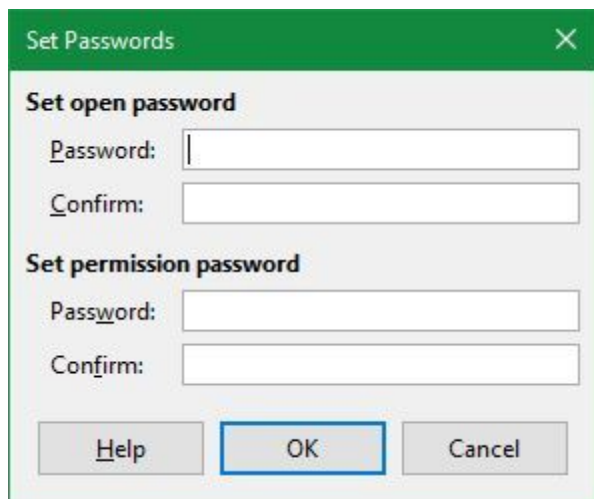
export URLs relative to the document; otherwise, they are exported as absolute links, requiring you to recreate the entire folder and file structure on the other computer.

With the Cross Document Links options, you control what program is used to open any links to documents. The Default option will use the operating system's default program for opening the linked document, but you can specify that the document is opened with the current reader, or with the operating system's default Internet browser. Whatever you select, you have to assume that the selected program will open the file-type referenced. So, if you have a mix of document types, your best option is Default.

Security Tab



You set what the reader can do with the document on the Security tab.

A screenshot of a 'Set Passwords' dialog box. The dialog has a green title bar with the text 'Set Passwords' and a close button (X). The main area is light gray and contains two sections. The first section is titled 'Set open password' and has two text input fields: 'Password:' and 'Confirm:'. The second section is titled 'Set permission password' and also has two text input fields: 'Password:' and 'Confirm:'. At the bottom of the dialog are three buttons: 'Help', 'OK', and 'Cancel'. The 'OK' button is highlighted with a blue border.

Set Passwords

Set open password

Password:

Confirm:

Set permission password

Passurd:

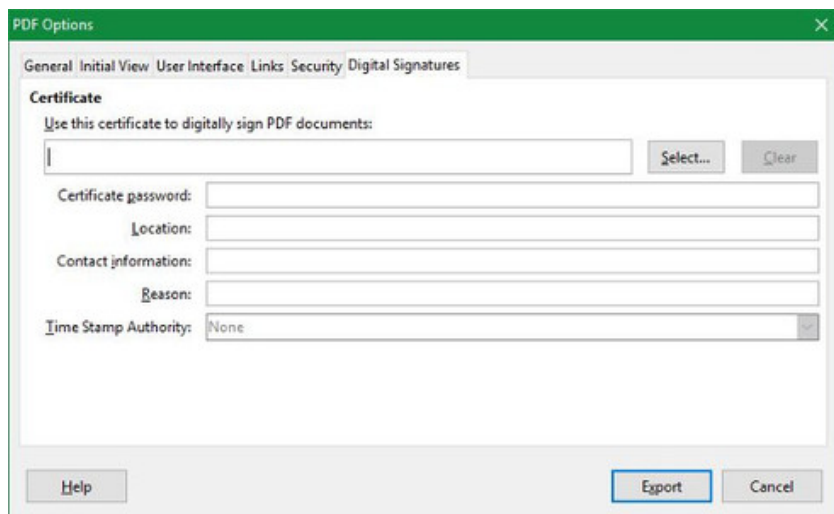
Confirm:

Help OK Cancel

The Password button lets you set two different passwords, one for opening and the other for permissions. To set either of the passwords, enter the password in the appropriate text box, and repeat in the second box to confirm. Leave the text boxes blank to not create a password for that feature.

If you entered and confirmed a password for permissions, the Print, Changes, and Contents settings are activated. The printing options indicate whether the reader is allowed to print the document without entering the password. The Changes section controls what changes are allowed without having to enter the password. The Contents settings control whether the reader can copy the contents of the document, or access the accessibility tools, without the password.

Digital Signatures Tab



The Digital Signatures tab lets you sign the document with a certificate. Digital signatures is a topic beyond the scope of this article, but know that you can add a digital signature when needed. The tab provides text boxes for the password and other information related to the certificate.

LibreOffice gives you many options for exporting your document to PDF. We have covered, in a passing overview, the options available. PDF is a good way to send a document to others without making it easy for them to edit the document. You never know when you might need it, as you could get a request for a document in PDF format.

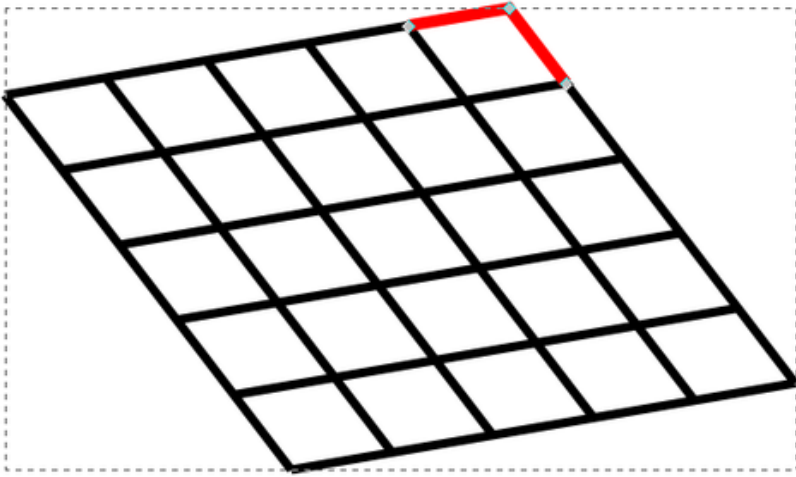
Drawing with Inkscape – Part 45

By Mark Crutch

If you've read the previous few articles, you should now have an idea of how to use Live Path Effects, and just how capable they can be. Rather than go through every remaining effect in detail, I'm going to spend the next couple of articles presenting a whistle-stop tour of those that are present in version 0.48. These are all also in 0.91, and their respective interfaces are the same between the two versions, so these examples should apply to either version. In each example, I'll present the original skeleton path in red with the results of the applied LPE in black.

Construct Grid

A simple LPE to start with, the Construct Grid effect does exactly as its name suggests – it constructs grids. It uses the first three nodes of the skeleton path to define two sides of a parallelogram, extending the shape to form a grid of cells based on the Size X and Size Y values in the UI.



The “live-ness” of this effect can make it useful if you want to drag the nodes around to produce the correct perspective by eye, rather than by creating a grid with numeric angles.

Hatches (rough)

This is a peculiar effect. Its main use is to simulate hand-drawn scribbles as a fill inside your (usually closed) path, but given the rough nature of the results – it even says “rough” in the LPE name – I don't think it really needs the huge number of fine-grained controls it presents. For most people, the key to using this LPE is to just use the on-canvas controls and a few of the main UI elements, without getting too bogged down in the many other options.

When you apply this effect to a shape, Inkscape draws one or more sine waves that try to fill the available area. The waves can be modulated in both frequency and amplitude by the parameters you set in the UI, and their angle, base frequency, and the amount of bend applied to them, are set by on-canvas handles.

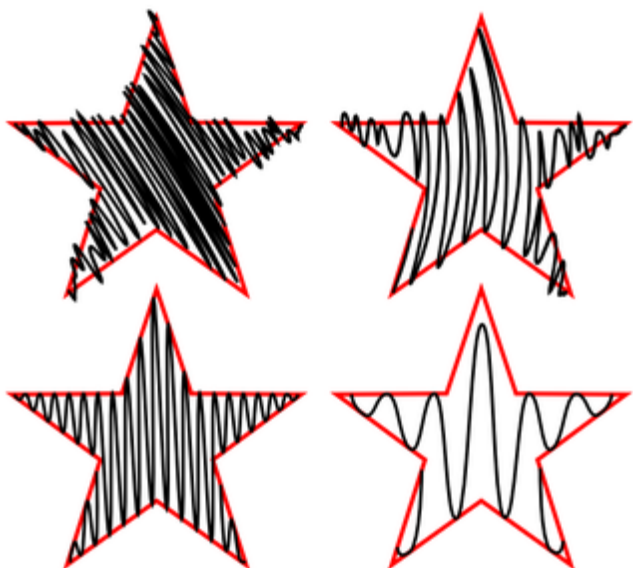
To get a feel for the effect, draw a closed path, then add the LPE. You'll see your path replaced by a squiggly line that approximates the original shape. Now switch to the Node tool (F2), and towards the middle of your shape you should see four handles – two circular and two diamond-shaped. If you see fewer than four, then it's

simply because some are positioned on top of others. Drag them around until all four are visible.

The four handles represent the end nodes of a pair of vectors (which, confusingly, aren't actually drawn as lines), and are used to set the main parameters for the effect. In each case the circular node is the reference point – drag that one, and the corresponding diamond will move in sync. This can be used to move the nodes to a clearer part of the canvas, or to some specific reference point in your drawing. Moving one of the diamonds adjusts both the angle and frequency of the sine waves used to fill your shape. The other diamond sets the amount of bend that is applied. It has an effect only if the Bend Hatches checkbox is ticked in the LPE dialog, so, if you don't want the additional curvature applied to your sine waves, simply uncheck that control.

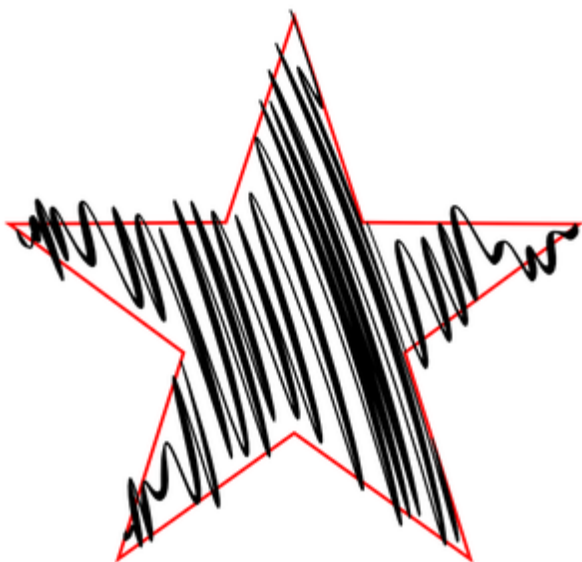
Of the remaining controls in the dialog, it's probably the top two that have most effect: Frequency Randomness is used to adjust the amount of variation that is applied to the base frequency, whilst Growth causes the frequency to increase from left to right. Set both values to zero if you want to use just the base frequency that you've set with the on-canvas handles.

With these basic controls, it's possible to produce a variety of effects, running from the appearance of a hand-drawn scribble, to a simple shaped sine wave:



Many of the settings in the dialog have pictures of dice next to them. Despite their appearance, they don't actually set the fields to random values. Rather, these are buttons which change the seed value in the random number generator that's used to produce the corresponding value in the hatching algorithm. Their only real use is to ensure that one copy of a shape using this LPE has a different hatching pattern to another copy – if you need to produce many similar shapes then clicking a few of the dice will ensure that they all look slightly different from one another.

The final checkbox, “Generate thick/thin path”, is worthy of a mention too. With this enabled, two sets of paths are created that move in and out of sync with each other on each half-cycle of the underlying sine wave. The specifics of the synchronisation between them are set by the last few fields in the UI. These two sets of paths are actually joined at each end, forming a single path that can be filled to give a calligraphic effect to the hatching:

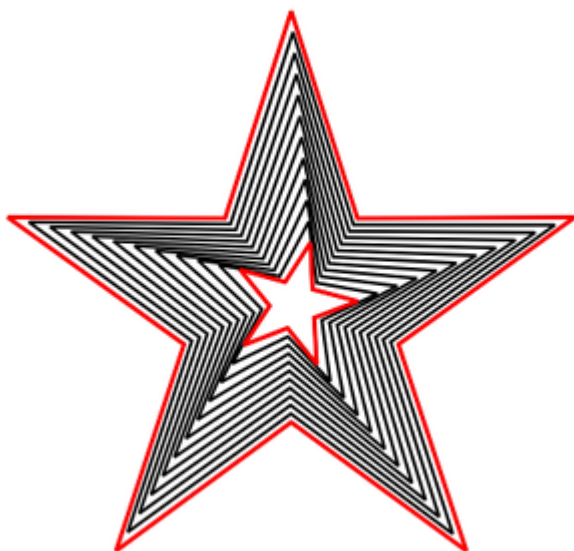


Interpolate Sub-Paths

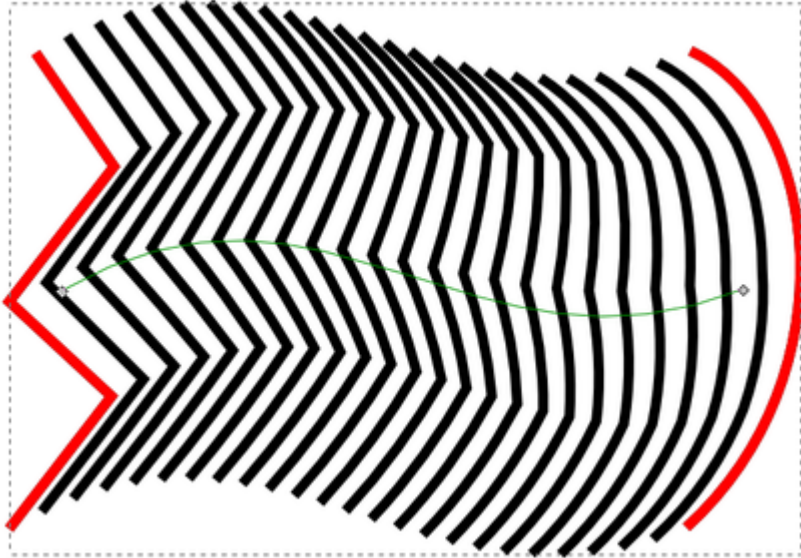
This effect requires that your skeleton path is made up of two sub-paths (if it has more than two, only the first and last ones are used by the LPE). Typically, sub-paths are created by combining multiple paths – through Boolean operations such as removing one path from another object that completely encloses it, or by breaking a single path into smaller sections by hand using the Node tool's Delete Segment or Break Path buttons. Consider this simple example of one star inside another, drawn separately, then combined using Path > Combine (CTRL-K). When the LPE is applied, a number of additional sub-paths are created, interpolating between the two sub-paths of the skeleton:



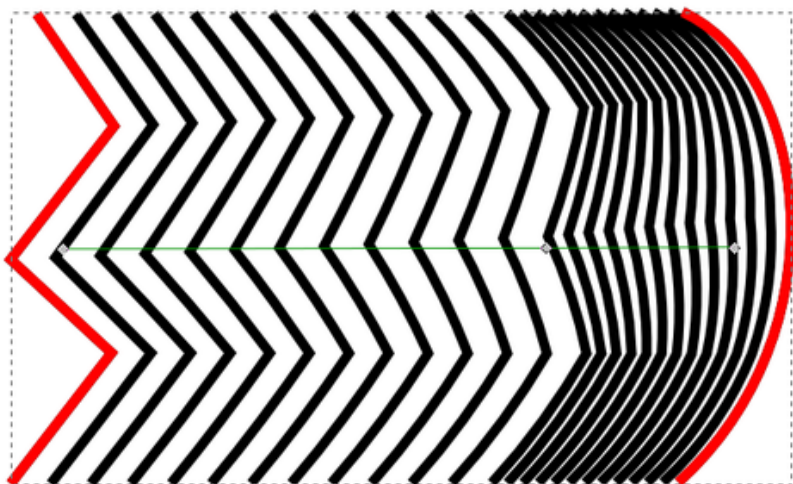
The total number of sub-paths in the final result is set using the Steps parameter. Increasing this, and turning the inner sub-path a little, demonstrates the sort of effects that you can easily create with this LPE:



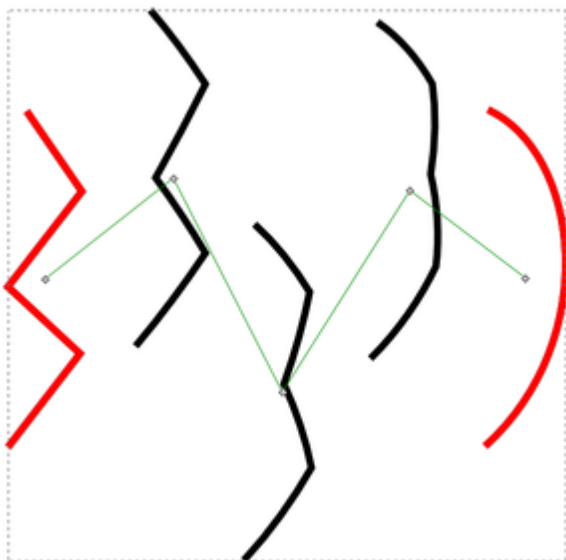
The Trajectory control in the LPE dialog shows the familiar group of four controls for setting a path. These allow you to specify a path along which the rendered sub-paths will be spaced, allowing for more than simple linear projections.



With the Equidistant Spacing checkbox ticked, the sub-paths will be placed evenly along the trajectory path. Un-check that, however, and their spacing will be determined by any additional nodes in the path. The nodes split the path into segments, then the total number of sub-paths is distributed between the segments. For example, a trajectory with three nodes will result in two segments, each holding half the rendered sub-paths. Moving the middle node, therefore, results in the spacing of the paths being adjusted – one half bunched together and the other half spread out.



By creating a trajectory with the same number of nodes as the Steps value for the LPE, each sub-path is tied to a single node, letting you accurately position them simply by moving the nodes around. This example uses Steps=5 together with a trajectory path that has five nodes, to demonstrate this possibility:



Next time we'll look at the remaining effects that are available in

0.48: Pattern along path, Ruler, Stitch sub-paths, and VonKoch.

Mark uses Inkscape to create three webcomics, 'The Greys', 'Monsters, Inked' and 'Elvie', which can all be found at <http://www.peppertop.com/>

Arduino - Home Brewing

by Ronnie Tucker

Arduino

I recently took up homebrewing and wondered how I could incorporate the Arduino. I think I can. I thought I'd use this article to show my thought process and planning before I even pick up an Arduino, or think about writing code.

The Basic Idea

Ideally, I need to keep my fermentation vessel between 18-25°C. The spare room that I'm using is sitting at about 16°C, so I need to find a way to control the heat around the vessel. I can't put anything in the vessel as this may introduce contamination, or break the seal on the vessel. I'd also like some lighting to let me see what's happening inside the vessel since the vessel is semi-transparent. Any other info would be a boon.

OK, so I know what I roughly want. Let me look at the pros and cons of the various things.

Vessel Heating

This is the one thing I really need, so this is the priority. Initially I was looking to modify something that's readily available like a heated car seat, or a pet blanket. Mainly those as they're low power (around 12V), but after more reading I'd be as well sticking with what I have just now, a reptile heat mat that I can wrap around the vessel. I just need to find a way to control the heat mat.

Temperature Reading

Like I mentioned earlier, I can't put anything in the vessel so I'm going to have to make do with a reading from the outside. I know I

can accomplish this with the DHT temperature/humidity module that I've used before. I'll just have to make sure it's firmly touching the outside of the vessel but not too fixed as it will need to be removed before cleaning the vessel.

Temperature Control

Now that I have those two nailed, I can try to figure out a way of controlling the heat mat. After a lot of research I think a relay switch is the best option. With this I can use the Arduino's 5V to trigger the switch to an on/off position. I've not used switches much, but the gist behind them is to put the live wire from the heat mat through the switch, which will break the circuit, then, when required, energise the switch with 5V to complete the circuit and the heat mat will come on.

Controlling the heat mat, I'll probably use the figures from the DHT module with code something like:

```
if temperature <19
    turn on heatmat
else if temperature is >22
    turn off heatmat
```

My thinking for the 19 and 22 is that the final temperature should be around 20°C to 21°C, but either way anything from 19-25°C is fine.

Another reason for the not-so-strict heating in my pseudo-code is that the heat mat will take about 20-30 seconds to reach full heat. I'm not worried about this as it is never hotter than about 32°C, it will take a while to heat the liquid inside, and, conversely, it'll take quite a while for the liquid to cool down. Hence, while the heat mat may be on for a little while it should need switching on/off only every few hours, at least, so it's not like I'd be switching it on and off every few minutes. Well, that's the theory. We'll see how that pans out in the practical phase.

Logging

I still have a spare ESP WiFi module, so I can probably do like I did with my plant monitoring project where I send the data to ThingSpeak. I'll probably note the temperature and humidity over day and time. Of course, day and time may mean I need to use a real-time clock module. Unless ThingSpeak tags on the day/time. Not sure. Can't remember if they do.

I could also log the brightness of the room using an LDR, but the light level has no bearing on the brew, so scratch that.

I'd like to have an alert system where I can get an SMS/email should the temperature go haywire. This is a possibility using ThingSpeak and Twilio, but is not something I've tinkered with before and will leave this to the end as it's not critical.

Lighting

Lighting is not critical, and will be manually controlled, so I'm not too worried about this. This will be a strip of 12V LED lighting with a transformer and a switch. No need for the Arduino to control the lighting. One major consideration for the lighting though is that it must be removable as the vessel has to be bleached sterile after use. I'll probably just attach the light strip(s) to the vessel with some tape or blu-tac.

Additions

I have a spare IP camera that doesn't seem to move up/down or left/right properly, so I might use it to view the fermenting vessel by putting it near the top rim to see in. My only query here is that if the camera switches to night vision mode, will the IR lights reflect off the vessel and bleach the image making it useless? Not sure, but that's something to test.

A further addition could be an LCD screen. If I put the screen near the top of the vessel, and within range of the camera view, I could monitor the temperature remotely.

As a quick visual-at-a-glance aid, I may add some LEDs to show if the temperature is within a certain range. Maybe between 20-22

could be a green LED with 25 + being red. Maybe 19 or less is a yellow LED.

Conclusion

The basic idea of controlling the temperature of the liquid with a heat mat is definitely possible. Same with the logging. Shouldn't be a problem.

The lighting (to see inside) isn't a necessity and not Arduino controlled, so it'll be left until last probably. Same with the IP camera. Nice, but not a necessity, and not Arduino controlled.

I'll more than likely include the LCD screen as it's a nice visual guide to the reading from the DHT and I can compare that against the thermometer that's stuck to the side of the vessel.

NEXT MONTH: *The project begins with the LCD screen and DHT and WiFi modules.*

Chrome Cult

by SJ Webb

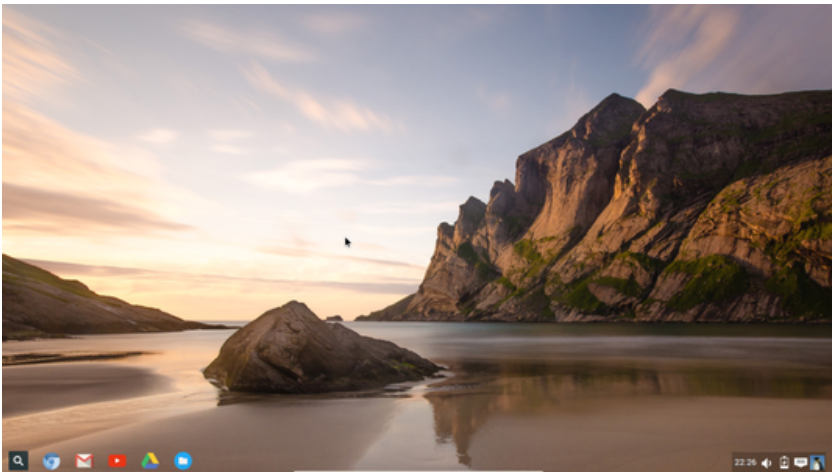
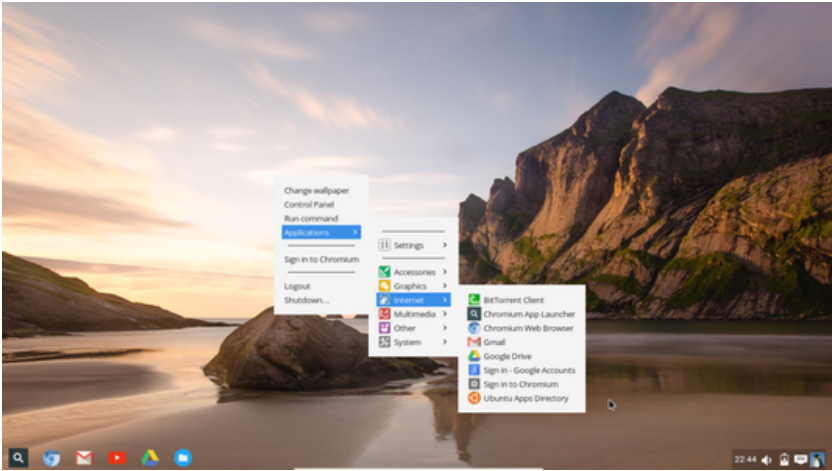
After seeing the varying aspects of the Chrome OS, are there other Linux distros running off the cloud? Perhaps there could be an open source solution to the closed OS by Google.

There are four Linux Distros that come to mind: Chromixium, Papyros, Solus, and Apricity.

Chromixium:

Chromixium is a popular one based off Ubuntu 14.04. Essentially, there has to be more than Chromixium. Chromixium was previously reviewed in Full Circle Magazine. It is gaining steam as a full distro, while staying true to the Chrome OS formula. It uses the Ubuntu Software Center. Chromixium picks up where the Chrome OS drops off. My only criticism is that Chromixium is too Chrome OS-like in nature.

Chromixium is a distro that has some solid groundwork. It deploys Grive for the Google Drive access. If you wanted a good feel of a Chromebook, then distro hop to Chromixium for a try. The Chromixium DE mirrors the first screenshots from the first Chrome Cult. You can see the shelf and profile. Chromixum uses Openbox and a few tweaks to get the Chrome OS feel.



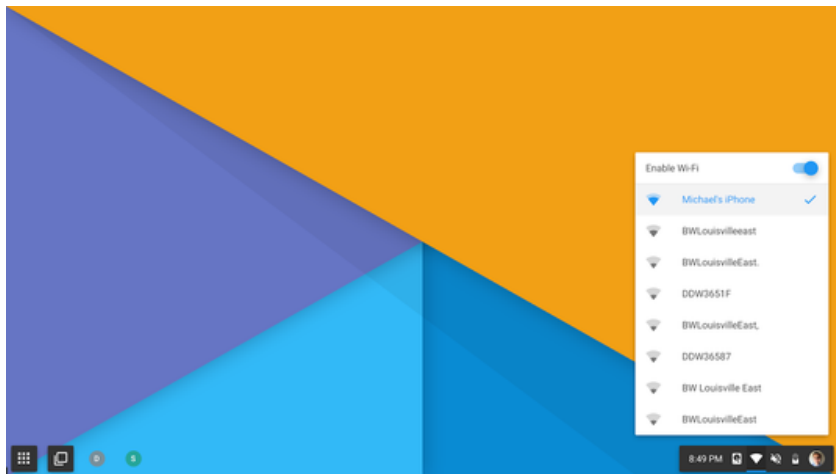
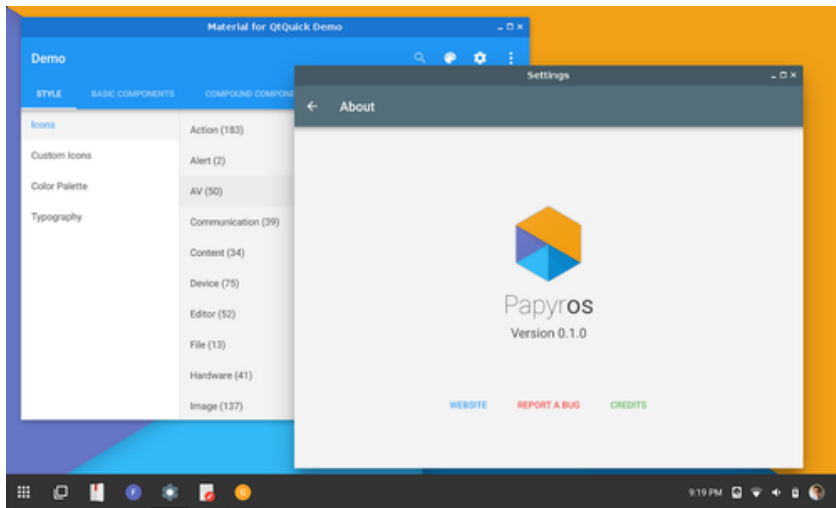
(This is Chromixium.)

Papyros:

Then there is Papyros. This distro had varying names since its inception. However Papyros is based off Arch Linux and it has yet to reach Alpha testing. It will be done soon per the website. It utilizes Google's Material Design guidelines. The DE has roots in KDE and Gnome.

The purpose to Papyros is simple but beautiful.

Our vision for Papyros is building a Linux operating system that is fun and easy to use for the average user. We're doing this by building an operating system that gets out of the user's way, integrates with cloud services and web technologies, and converges across devices and form factors.



(This is Papyros.)

Their current work in progress is:

- A rolling release architecture with atomic upgrades and

rollbacks.

- Integration with web apps such as Gmail, Inbox, and Evernote.
- A simple and easy-to-use desktop environment.
- A cross-platform app development framework based on QtQuick.
- A file manager and settings app for the OS.

This distro could use some backers to help support it. They are using Bountysource Salt as a crowdfunder. Their future goals: intelligent notifications, user account restrictions, application bundles, sandboxing, and, if possible, convergence.

The developer is running a Google+ account and infrequent blog. The last activity about the distro is from September 2015. There is no Papyros Installer. You can run a Papyros Shell if you have Arch Linux already downloaded. I truly hope this distro can get the momentum to be successful like Chromixium.

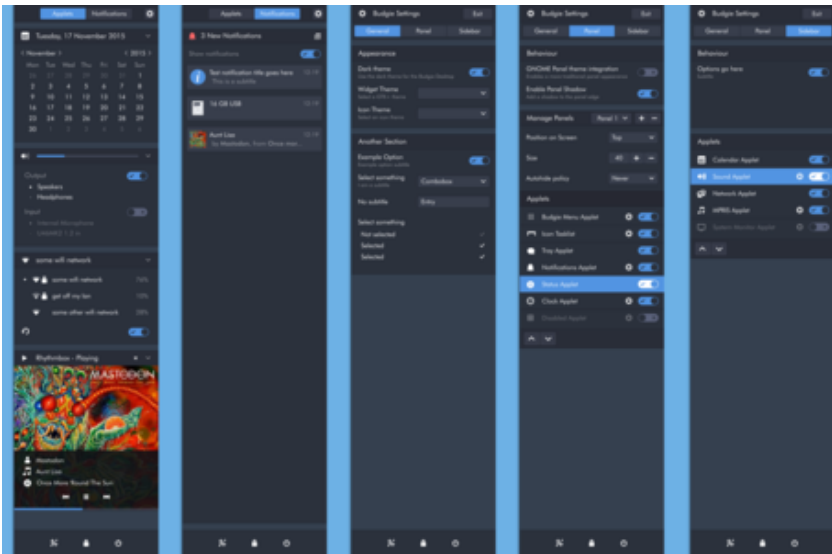
Papyros Linux could possibly use the Arch User Repos (AUR). The AUR is a strong PPA listing for Arch Linux. The AUR has Dropbox, ownCloud, Grive, and other cloud repositories. This would allow Papyros to have access to many cloud services utilized by the Chromebook Ecosphere, while still being open source. I am hoping to do a better review of Papyros when they develop their installer. I prefer not to install Arch Linux just to try out a new and developing OS.

Solus:

Solus is not based on any previous work; it is built from the ground up. It is the most mature and established distro for minimal design. The DE layout is similar to previously mentioned OSes. It has its own DE called Budgie. Solus uses the Gnome Software Center, it favors the Gnome ecosphere. The PPA manager is eopkg. The Solus Project has an active forum and blog. Budgie can be installed on Linux Mint and Ubuntu. It uses an applet called Raven.

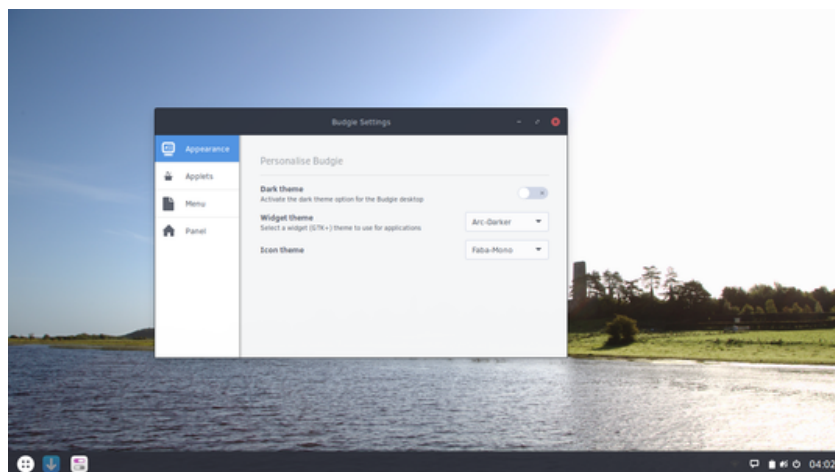
Raven is a notification and customization center. It does the following per Solus Project:

- Calendar access and Media Center Controls.
- Manage application and system notifications.
- Customize the Budgie DE.
- Quick access to power options and system settings.

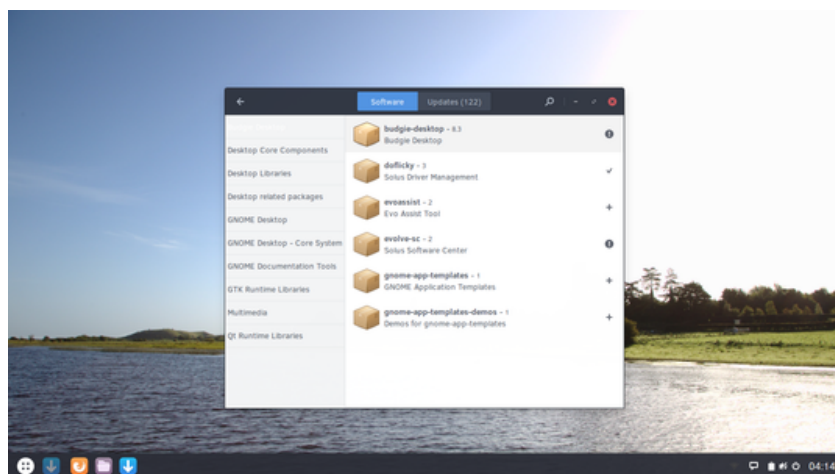


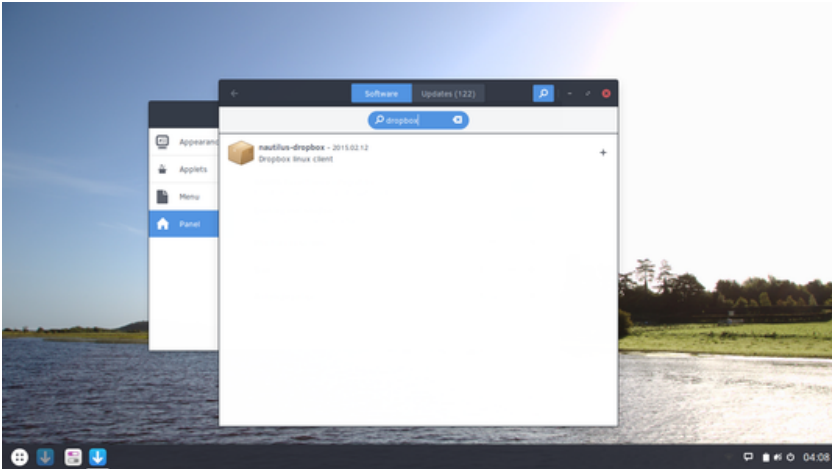
(This is Raven.)





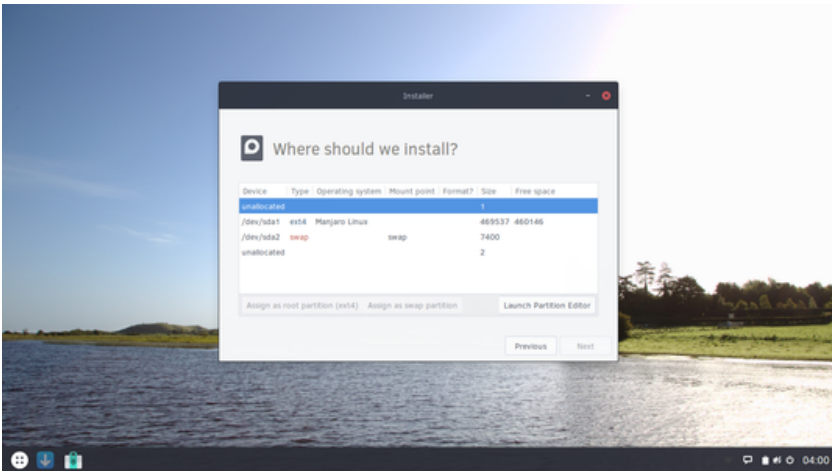
(These are Budgie DE Screenshots.)





(This is the Software Center.)

Solus runs well on my older HP. The OS feels minimalist while still offering the functionality of a full DE. Solus has an established forum that supports new users very well. The only issue with Solus is the Gparted Partition Installer. I had to redo the install steps a couple of times to get Solus fully installed. However, this is a small complaint. The install was less than 30 minutes. Only a 64-bit architecture is offered at this time.



(This is the Solus Installer.)

Solus just finished beta testing. I am thinking of running this OS for a while on my older HP at home. The main goals of Solus are below:

- Solus Operating System is completely free and open source. We leverage fantastic open source software to enrich the end-user experience
- We focus completely on the desktop, and believe users deserve a first-class desktop experience. No phablets here!
- We believe an operating system should get out of your way, and do its job as well as it possibly can when it is needed
- Each release of Solus will be supported for 2 years. And there will be 4 updates each year for the OS.

Apricity:

And now for Apricity. This is another Arch Linux derivative. It has a strong community too. The developers are based out of Chicago, IL, USA. It is currently in beta testing. I will review this distro next month.

GnuCash: downloading and updating bank records

by Tom Lombardy

GnuCash is in the repositories and easy to install. Once installed, if you want to download transactions posted to your bank account, there are a few relatively easy steps to take.



Once you open GnuCash, click on File > New File, or use Ctrl + N to open the New Account Hierarchy Setup window.

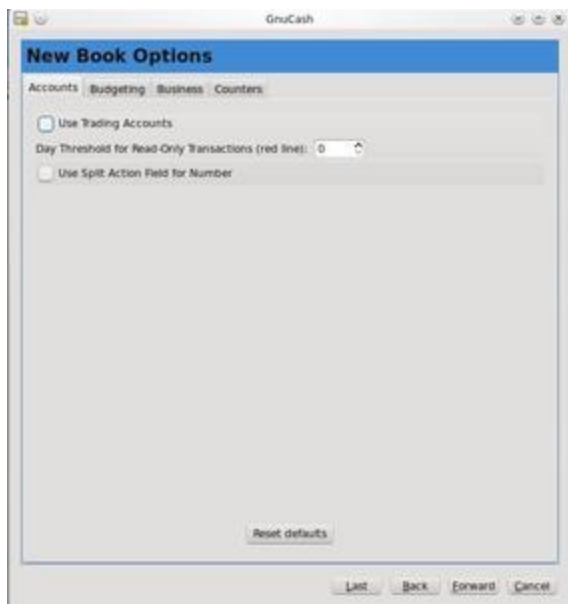
It will help you set up a set of GnuCash Accounts for your assets, liabilities and different types of income and expenses you may have.

On this screen, you can choose Cancel or Forward to the next screen, Choose Currency.



The Choose Currency is self-explanatory, as you can choose the currency of your area.

Once you have chosen your currency, you have the option to go Back, Forward or Cancel.



Going Forward takes you to the New Book Options.

The Accounts, Budgeting, Business and Counters tabs I believe are more Business orientated. The Budgeting tab is greyed out so there are no options on that tab. So, for my personal finances, I did not choose any of the options and went Forward to the next screen, Choose accounts to create.



Choose accounts to create screen:

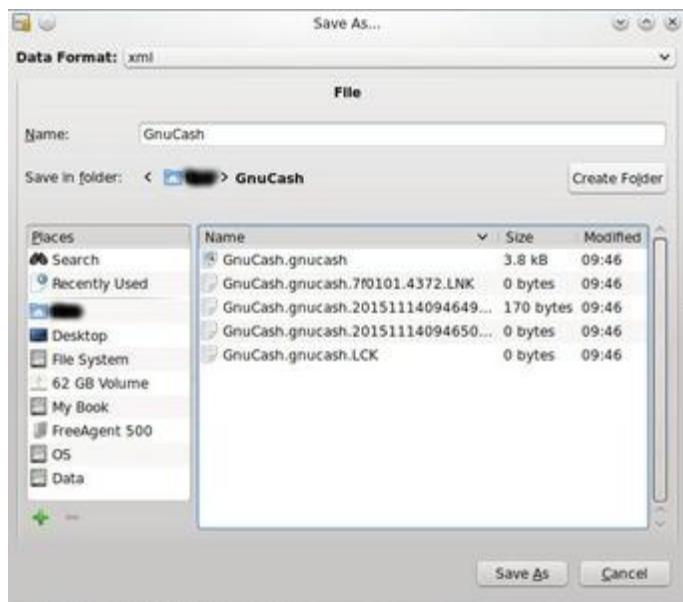
As you can see, Common Accounts is selected and the Category Description states that most users will want to use this option. From here, click on Forward to Setup selected accounts.



Setup selected accounts screen:

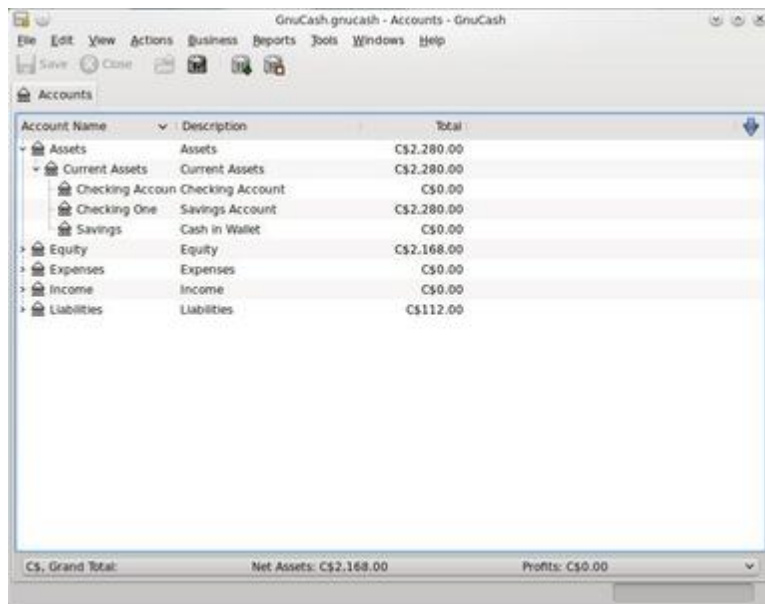
This is where you set up your accounts. When you click on an account and highlight it, you then double-click on Account Name to specify the name you wish to assign to the account: ie., My Banking Account. With the account highlighted, you can also double-click on the Opening Balance (refer to your latest bank statements for these figures), and you will be able to start with your Opening Balance. If you fail to enter an Opening Balance, or Account Name, you have the option of entering them when you open the the register screen after setting everything up.

Clicking on Forward brings you to the Finish Account Setup screen. Here, once again you can go Back, Apply or Cancel the actions. Clicking on the Apply option brings you to the Save As window.

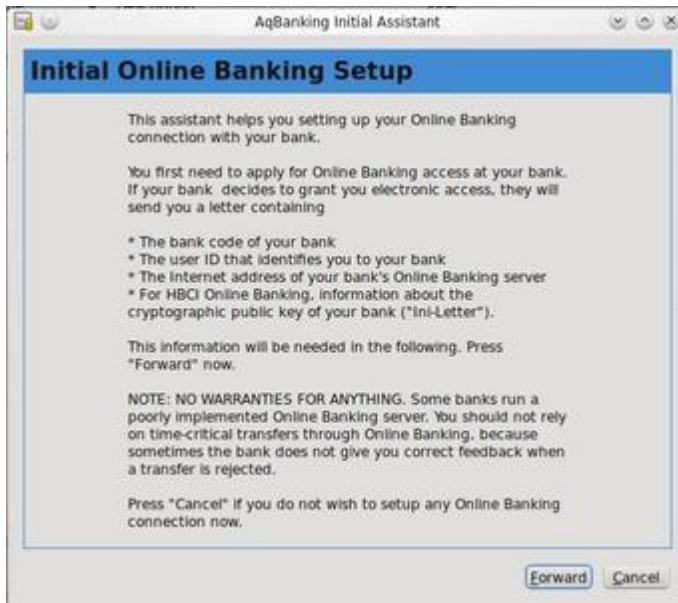


Save As:

Here you create a folder for your files and give it your preferred name.



After saving your account, your banking accounts are listed under Assets. At this point, if you do not wish to download your online banking file, you can just use your GnuCash as a regular check register.



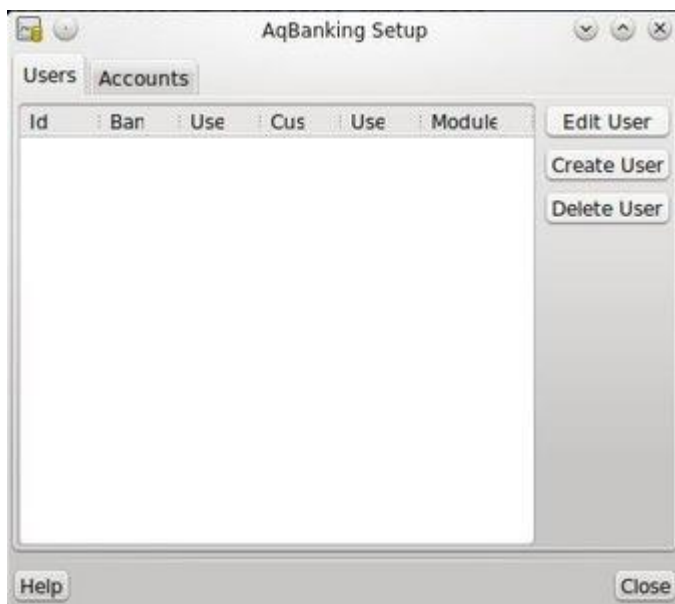
Next, you can set up your online banking by clicking on Tools, online banking setup.

Here you will need the following:

The bank code of your bank, the user ID that identifies you to your bank, and the Internet address of your bank's online banking server. You must contact your bank for this information. When you have this information click on Forward



Clicking on Forward brings you to the Start AqBanking Initial Assistant.

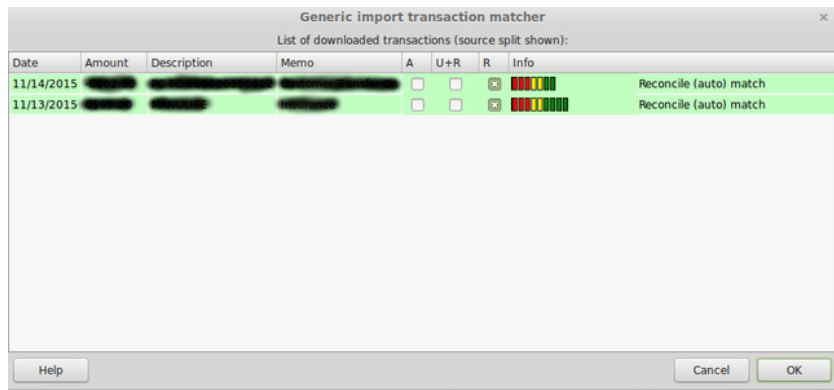


After clicking on Start AqBanking Wizard, your next screen allows

you to Create User and Accounts in order to download banking data for GnuCash.

I will not actually create another bank account as I have everything already set up with my banks.

Once this is finished, go to your personal banking institution, find where you can download your data for your account, and choose Quicken.



After downloading your file, click on File > Import OFX/OFX... and navigate to the downloaded Quicken file.

Highlight the downloaded file and press enter. This will bring up the Generic Import transaction matcher window, which allows you to reconcile your transactions with three options: A = imports transactions you have not entered in your register; U + R allows you to update and reconcile the transaction, and R reconciles the transactions you have entered in your register. Once you have selected your preferences, click OK. You will then be brought back to your account register and see your imported transactions have been updated with a “c”.

I hope this will help with initial setup of your accounts.

Valentine's Day – How to say it with LaTeX.

by John Kerr

Valentine's Day is coming, and I can't think of a better excuse to show a less serious side of LaTeX – while at the same time showing some of the fancy font formatting that we can do.

The advantage of creating your own card is that you can avoid going to the store and reading all kinds of cards that are a bit too mushy for your taste, and resorting to picking the best one from a bad lot that just is “not you”. He/she would appreciate receiving something that you made the effort of making yourself. The card can also be used to create a card for any event or holiday.

Creating any kind of card is made easy with this template that makes use of the `gcard.sty`, which would be installed on your computer as part of the `texlive-latex-extra` file.

The preamble contains these commands to make things happen:

```
\usepackage{gcard}  
\usepackage{calligra}  
\usepackage{graphicx}  
\usepackage{color}
```

The package `gcard` is what formats the page, `calligra` gives us the handwriting font, `graphicx` gives us pictures, and `color` lets us change the colour of the font. You may notice the two spellings of the word colour. In LaTeX we have to do as the Americans do and use their spelling of color for colour. I refuse to capitulate in the rest of the column.

Within the document, we need the `\calligra` command when we want the handwriting font to appear. To change the font colour to

red and change the size of the font:

```
{\LARGE \color{red} * }
```

Here is something that can trip you up and causes errors.

See the asterisk in the the code above? That is where your text goes, and it can be many paragraphs if you like. But that last “ } “ can get lost or deleted if you are not careful, especially when you add more text formatting code like:

```
{\calligra Happy ...}
```

When we run it all together it looks like:

```
\LARGE \color{red}  
{\calligra Happy ...}}
```

Notice the double }} at the end. If you forget to put those in, or one } gets deleted, your document will not compile properly.

Here is my file for the Valentine's day card:

```
\\documentclass[12 pt, letterpaper, portrait]{article}  
\usepackage{gcard}%calls for the package to make the card  
\usepackage{calligra} % added for handwriting font  
\usepackage[T1]{fontenc}  
\usepackage{graphicx}  
\usepackage{color} %added for font color  
\begin{document}  
\begin{frontcover}  
\begin{center}  
\includegraphics{1.png}\\  
\LARGE \color{red} %temporary command to change font color  
\calligra to a special person.}}  
\end{center}  
\end{frontcover}
```

```

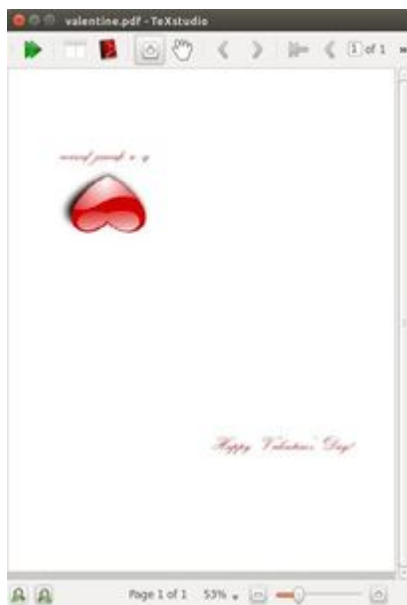
\begin{insideleft}
\end{insideleft}
\begin{insideright}
{\LARGE \color{red} %temporary command to change font co
{\calligra Happy Valentine's Day!}}
\end{insideright}
\end{document}

```

You will have four small pages on one side of the paper. You will have to fold it to make your card.

Depending on font sizes and what kind of card you are making, you may have to adjust things with centering or no centering on the page.

That is how to make a greeting card in LaTeX.



Migration from VAX/VMS to Linux - part 1 - introduction

by Theo van Oosten

In the early days of computers, a company called Digital Equipment Corporation (DEC, first bought by Compaq, today part of Hewlett-Packard) created their 32-bit VAX (Virtual Address eXtention) computer as an upgrade from the 16-bit PDP/11 (Programmable Data Processor) computer. It uses openVMS as its operating system. In the steel-making company where I work, a large number of these computers were used to control the manufacturing process. We use (VAX-) Pascal as the standard programming language, and a home-brew computer interconnection program called HDN.



The very first version of the VAX, the 11/780

We are not the only manufacturing company that used these computers. There are thousands of VAX's sold all over the world. Because a VAX/VMS computer is so reliable, there are today, after

more than 25 years, still a large number of them in use, including some in the company where I work. But after more than 25 years, the number of people knowing their way around in VMS is quickly diminishing, and it is getting harder to find replacement parts for failing hardware. The hardware could be replaced with emulators like Charon-VAX (although, I have had experiences with frequent, but random, errors on Charon-VAX, I will explain these in one of the following articles), but expert programmers cannot be emulated. So, in the end, even these reliable computers will have to be replaced. But replacing these computers will take a lot of time and money, as the functionality must be migrated to another operating system.

Windows?

Because most people are familiar only with Windows, this would be the logical choice. But the migration from VAX/VMS to Windows is time-consuming, expensive and complex, due to the different way the operating system works, and despite the fact that Windows NT is based, loosely, on the VMS predecessor, RSX, as used on the PDP/11. This complexity increases the chance of disruption of the manufacturing process during the migration, which will cost even more money, not to mention the damage to the reputation if you fail to deliver in time, or at a lower quality than the customer is used to. Also the reliability of Windows is questionable: most programs delivered with the operating system are an integrated part of it, which might lead to a complete system breakdown if just one component fails, and viruses are a problem in itself. Protection against them takes a huge part of the systems resources, and, in our case, on one occasion, was even itself the cause of a total system breakdown. Mandatory updates of the operating system to patch security leaks require a frequent reboot of the computer, causing a loss of production time. And finally, some experts are quietly admitting that they are slowly losing the battle against the flood of new viruses....

What about the database?

Besides the different way programs are written for Windows, there is another problem: DEC created on their VAX/VMS computers

another type of database compared to the relational databases used today, a network database named DBMS32 (DataBase Management System 32-bit). In this case, the word 'network' does not refer to a LAN or the Internet, but to the internal organization of the data. The different types of data are not linked to each other through a relation, but by a double-linked list. Finding the first/next/last member of a set is lightning fast, because you only have to follow the link – instead of reading all records in the database to see if the relation is satisfied. When you migrate a VAX/VMS system to Windows, you also have to migrate from network databases (if you are using it) to relational databases.

Linux!

As I was thinking about an alternative way to migrate, it appeared to me that VAX-Pascal is largely compatible with Free Pascal. And the way Linux works is largely compatible with VAX/VMS. So I decided to try to convert our programs to Lazarus/Free Pascal, but found that there is no replacement for DBMS32. So.... I created one. It's written in Lazarus/Free Pascal, and includes a GUI replacement for DBQ – the database client interface program used to read or enter data. Not entirely up to spec yet, but that will improve over time. I replaced the interconnection program HDN by a set of programs: one to send and one to receive the data, operating system independent, and with the data in readable form, formatted in XML-style, while using folders as send and receive buffers. To be used by our applications, I created an API equal to that of HDN, so the applications remain untouched. This causes less risk of failure, because they just needed to be linked to another library.

It is not going to be easy...

The way I state this might suggest that migrating a VAX/VMS system to Linux (in my case Linux Mint 17) is a walk in the park. This is, unfortunately, not true. There are third party programs used on VMS systems which have no Linux replacements. You would have to rewrite those programs based on their functional/technical description, or find another way to deal with the functions they perform. There are libraries offered by DEC included in VMS with no counterpart in Linux, such as FDMS (Forms Display Management

System). And then there are technical functions used in VMS with no apparent replacement in Linux, such as eventflags and logicals. In the following articles, I will go more in depth to describe how I replace these, and other functionality such as mailboxes (IPC), and how to deal with Asynchronous System Traps, DCL and file version numbers.

If you need help...

Because my company is not the only one that wants to migrate away from VAX/VMS, I am willing to provide DBMS32 and the other replacements as open source under the GPL license to anyone who needs it. And I am offering to assist in the conversion of your VAX/VMS programs. This will be magnitudes cheaper than a complete re-engineering and conversion to Windows and there is a much smaller chance of disruption of the manufacturing process during the migration, as the conversion is almost 1-on-1.

I think the advantages of a network database would be interesting for new projects as well. If there are enough people who would like to know more about using network databases and their (dis)advantages, I will write some articles on how a network database is organized and how it can be used in comparison to a relational database.

Next month

In the next article, I will explain what eventflags are, what they are used for, and why they are so important to dedicate an article to them.

Bio: After keeping VAX/VMS systems running for 30 years, Theo needed a new challenge and started from scratch with Linux to re-do every mistake he made all over again. You can email Theo at: info@theovanoosten.nl



Online
BACKUP

Secure
SYNC

Easy
SHARING

- ☞ Access all your data in one de-duplicated location
- ☞ Configurable multi-platform synchronization
- ☞ Preserve all historical versions & deleted files
- ☞ Share folders instantly in web ShareRooms w / RSS
- ☞ Retrieve files from any internet-connected device
- ☞ Comprehensive 'zero-knowledge' data encryption
- ☞ 2 GBs Free / \$10 per 100 GBs / Unlimited devices

<https://spideroak.com>

Whether you need to access a document you have stored on a remote server, synchronize data between a Mac, Windows or Linux device, share important business documents with your clients, or just rest easy knowing all of your data is safely, securely, and automatically backed up - SpiderOak's free online backup, online sync and online sharing solution can handle all your needs!

SpiderOak offers a different approach to online backup by combining a suite of services into one consolidated tool - free online backup, synchronization, sharing, remote access, and storage. This difference is further measured in our zero-knowledge privacy policy - the first one ever employed in this setting. Our flexible design allows you to handle data from any operating system (Mac, Windows and Linux) or location (external drives, network volumes, USB keys, etc...) using just one centralized account.

Download mobile clients
for **iOS & Android**

JOIN SPIDEROAK NOW
Get 2 Free GBs

Get 25% off any SpiderOak package
with the code: **FullcirclemagFans**

Write For Full Circle Magazine

Guidelines

The single rule for an article is that it must somehow be linked to Ubuntu or one of its many derivatives—Kubuntu, Xubuntu, Lubuntu, etc.

Write your article in whichever software you choose—I would recommend LibreOffice. But, **please spell and grammar-check it!**

The Official Full Circle Style Guide can be read at: <http://url.fullcirclemagazine.org/75d471>

Please read this document before submitting an article. Follow the guidelines and you will have a much better chance of seeing your article in Full Circle.

Writing

There is no word limit for articles, but be advised that long articles may be split across several issues. In your article, please indicate where you would like a particular image to be. Please do not use any formatting in your document.

Images

Images should be no wider than 800 pixels, in JPG format, and use low compression.

When you are ready to submit your article, please email it to: articles@fullcirclemagazine.org

Non-English Writers

If your native language is not English, don't worry. Write your article, and one of the proofreaders will read it for you and correct

any grammatical or spelling errors. Not only are you helping the magazine and the community, but we'll help you with your English!

FOR REVIEWS:

Games/Applications

When reviewing games/applications, please state clearly:

- title of the game
- who makes the game
- is it free, or a paid download?
- where to get it from (give download/homepage URL)
- is it Linux native, or did you use Wine?
- your marks out of five
- a summary – with positive and negative points

Hardware

When reviewing hardware, please state clearly:

- make and model of the hardware
- what category would you put this hardware into?
- any glitches that you had while using the hardware?
- easy to get the hardware working in Linux?
- did you have to use Windows drivers?
- marks out of five
- a summary – with positive and negative points

You don't need to be an expert to write an article – write about the games, applications and hardware that you use every day.

Linux Labs

RepRapPro Fisher 1 Build - Part 2

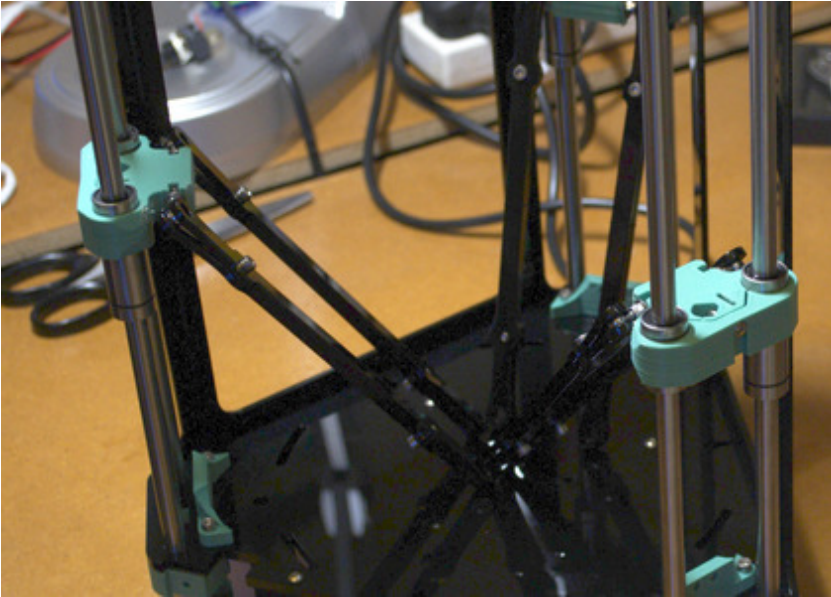
by Ronnie Tucker

With this part of the Fisher 1 build, we give it some sides. There are two sides and a back. The back, which comes later, is where we access the SD card slot and have the power jack. Again, you need to peel the protective covering from both sides of the two side panels. Endstops are little microswitches that your carriages will touch and signal that they've reached their end point. These microswitches are held in place with small cable ties. The two side panels are held in place by several screws.

Connecting Rods

This one is a bit of a boring job. You get two sheets of strips. You pop the strips out of the sheet in pairs. Again, you remove the protective covering from both sides of each rod, then screw the rods together. Then do it all five more times. You get six rods—each made up with a pair of strips screwed together.

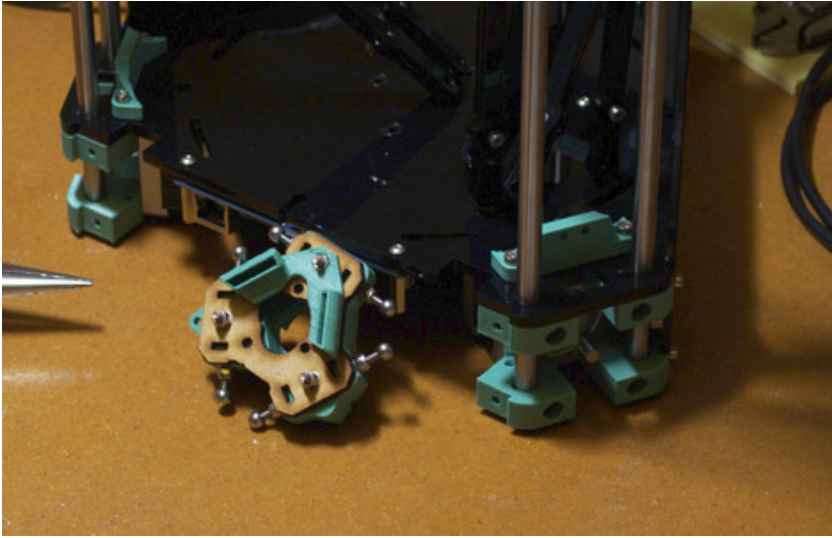
The rods should be carefully pried apart at the edges and the steel ball on the sides of the carriages goes between the pair of strips on the rods.



Effector Assembly

The nozzle that'll heat up and melt the plastic filament sits inside the effector. The effector is attached to the rods. Hopefully, now you can see how the nozzle will move, or be aimed. The carriages will, independently, go up/down with the effector dangling from the carriages on the rods.

The effector is a tricky contraption to build. It involves trying to tighten screws that are quite well hidden, so having angled screwdrivers, or Allen keys, would be helpful here. Took a bit of fiddling, but I managed it in the end with just straight screwdrivers and with Allen keys that I normally use on my bicycle.



Again, you'll need the callipers to check the total width of the sides with more steel balls screwed in place. You might need a metal file for this to shorten the screws and bring the steel balls back a touch.

Extruder Assembly

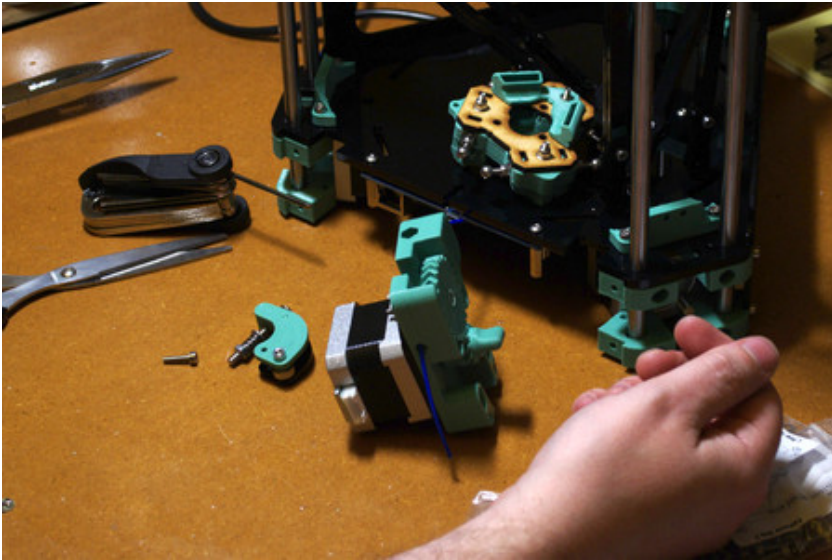
The extruder, as you might have guessed, extrudes your PLA plastic filament. It feeds the filament down a tube into the heated nozzle.

Yet again, more peeling of plastic. The extruder uses up the last motor in the box of bits and requires you to insert the tiniest of screws into a winding mechanism. So make sure you have a really small Allen key handy.

You also need to make the idler lever, which you can think of as being a setting screw to set how tight, or slack, you will be pulling in the filament.

Once you put all the pieces together, you are left with the final extruder. With this made, you can now cut a piece of filament and try putting it into the assembly, then winding the mechanism to pull the filament into the assembly and out the other end. This is also where you fine-tune that 'setting screw' I mentioned. You should be able to gently hold the filament between your fingers and

still have it pull through. This takes a bit of tweaking, but can still be tweaked when it's in its final place.



Next time, we'll be fitting the hot end (nozzle) and putting the other electronic bits in place.

Q&A

By Gord Campbell

Q I want to install VLC Media Player. What password can I use to authenticate?

A (Thanks to grahammechanical in the Ubuntu Forums)
When we install Ubuntu, we are asked to set a username & password. That username is the name we log into Ubuntu with, and that password authenticates logging in with that username.

Once we login to Ubuntu, we can do most tasks without needing to authenticate the action. But there are certain tasks that only we are allowed to perform, and for those tasks we are asked to authenticate the action. We enter the password that we created when we installed Ubuntu.

Q Can't pair bluetooth keyboard logitech k480 with Ubuntu 15.10.

A (Thanks to jeremy31 in the Ubuntu Forums) You need to press the button on the keyboard for "Windows/Android/Chrome OS" to put it in discovery mode. Then use the bluetooth GUI to search. (Gord adds: This answer applies to most Bluetooth devices, irrespective of OS.)

Q I have an old PC that has Windows XP which I rarely use. I want to try Ubuntu OS.

A If the old computer has 1 GB of memory, it should be fine with Xubuntu, Lubuntu or Ubuntu Mate. If it has 512 MB of memory, and the video does not steal any of that memory, it should run reasonably well. If it has less than 512 MB, it will not provide a happy experience.

Skills you need: how to boot from DVD or USB, how to deal with partitions.

Q How can I configure Apache2 to serve pages from a folder under my Home?

A (Thanks to SlidingHorn in the Ubuntu Forums) From what I'm reading, you'll have to make 2 edits:

In `/etc/apache2/sites-available/000-default.conf`, find "DocumentRoot" and change to the following:

DocumentRoot `/path/to/new/root`

In `/etc/apache2/apache2.conf`, find

```
<Directory /var/www/html/>  
Options Indexes FollowSymLinks  
AllowOverride None  
Require all granted  
</Directory>
```

And change the `"/var/www/html"` to the absolute path to your desired home directory.

Top questions at Askubuntu

- What is the meaning of the `|` symbol in the shell?
<http://goo.gl/wME5NU>

- I installed a program by getting its source code, and then running `sudo make install`; how to make `apt-get` know about it?
<http://goo.gl/7Vcpl0>
 - Why does `^C`, `^V`, etc. appear in the terminal when I use the `Ctrl + character` keyboard shortcut?
<http://goo.gl/AA09Ov>
 - List all recently changed files (recursive)
<http://goo.gl/wV3e1Z>
 - How to charge my Ubuntu phone's battery off my Ubuntu laptop's battery?
<http://goo.gl/GilP6p>
 - Where should I keep my personal files while keeping the pathname short?
<http://goo.gl/zMfj1Z>
 - How to enter password only once in a bash script needing `sudo`
<http://goo.gl/fLesVY>
 - Can I minimize a window into a box on Unity?
<http://goo.gl/LTRICz>
 - How to set the default program to open a certain file-type in a certain folder?
<http://goo.gl/1BQ1LK>
-

Tips and Techniques

Why?

Why would someone install Linux with an "LVM" disk, when they don't know what that means?

Why would someone install Linux with a software RAID, when they

have not spent the time required to understand how software RAID works?

Why would someone assume that their computer will work forever, when their car won't?

Book Review

by Greg Walters



Python Playground: Geeky projects for the curious programmer

By Mahesh Venkitachalam

November 2015, 352 pp.

Publisher: No Starch Press

ISBN: 978-1-59327-604-1

When I first got this book, I was very excited. When I opened the mailer, I was somewhat concerned by the cover... two robots with laptops on a teeter totter. The sub-title "Geeky projects for the curious programmer" helped a little bit, but my eyes kept going back to those robots, no matter how hard I tried to ignore them.

Once I got into the book, however, my concerns were assuaged. Glancing at the table of contents, I was pleased by the project-based format. Part 1 deals with iTunes Playlists and Spirographs, neither of which really excited me. Part 2, however, caused my heart to start to beat faster. The three projects cover Conway's Game of Life, Generating Musical Overtones, and Flock simulations – all of which are of interest to me for various reasons. Continuing down, my eyes

were drawn to "Part 5: Hardware Hacking". My heart skipped a beat (which at my age isn't really a good thing) and I immediately jumped directly to the first page of the section. Sure enough, it was talking about using the Raspberry Pi and the Arduino. I was in heaven. I was smiling so hard that my face started to hurt.

Reading through chapter 12 (Introduction to the Arduino) immediately showed that this author has a very good command of Python and his code is very tight. He explains his code in what I call "the breakout format", which is where the code is presented as a block or snippet, then is explained step-by-step. No Starch uses a very nice template that allows the author to put graphical call-out numbers (numbers inside a small black circle) next to a line of code, and then the author simply references the number in the explanation section. This makes it very easy for the reader to quickly refer to a line of code that they need more explanation for.

There are a total of 14 projects that include ASCII art, particle system simulation, as well as using OpenGL. The author also teaches how to use popular and important Python libraries like numpy, matplotlib, pygame and more.

The author states right from the beginning, that this book is not intended to be the reader's first book on Python and I completely agree. While each project has in-depth explanations of not only the code but also the background needed to understand the project, it is far above the level of a beginning programmer. If, however, the reader has some background in other high level languages and has a good grasp of Python syntax, then this is a great book to move beyond the normal command-line type programs. The projects presented are all real-world usable and very relevant to today.

The bottom line is that this is a book that belongs in every Python programmer's library. I have to give this book 5 out of 5 stars. No Starch has a great book on its hands.

Table of Contents

Part I: Warming Up

Chapter 1: Parsing iTunes Playlists

Chapter 2: Spirographs

Part II: Simulating Life

Chapter 3: Conway's Game of Life

Chapter 4: Generating Musical Overtones with the Karplus-Strong Algorithm

Chapter 5: Boids: Simulating a Flock

Part III: Fun with Images

Chapter 6: ASCII Art

Chapter 7: Photomosaics

Chapter 8: Autostereograms

Part IV: Enter 3D

Chapter 9: Understanding OpenGL

Chapter 10: Particle Systems

Chapter 11: Volume Rendering

Part V: Hardware Hacking

Chapter 12: Introduction to the Arduino

Chapter 13: Laser Audio Display

Chapter 14: A Raspberry Pi Based Weather Monitor

Appendix A: Software Installation

Appendix B: Basic Practical Electronics

Appendix C: Raspberry Pi Tips and Tricks

Review - Vivaldi Browser Beta 2

by Ronnie Tucker

Vivaldi is a new web browser from one of the two original developers of the Opera browser. Opera is still with us, but as Jon says:

“The browser we once loved has changed its direction. Sadly, it is no longer serving its community of users and contributors — who helped build the browser in the first place.

So we came to a natural conclusion: we must make a new browser. A browser for ourselves and for our friends. A browser that is fast, but also a browser that is rich in functionality, highly flexible, and puts the user first. A browser that is made for you.” - Jon

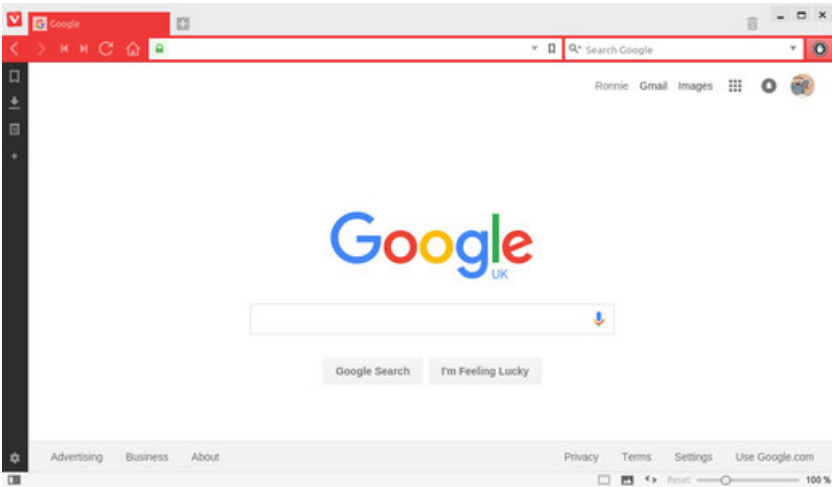
Install:

Installing is easy. Simply visit <https://vivaldi.com> and click the download button on the front page. From there, choose your 32/64-bit DEB file. When downloaded, double click on the DEB to install, or install using:

```
sudo apt-get install vivaldi-beta_1.0.344.37-1_amd64.deb
```

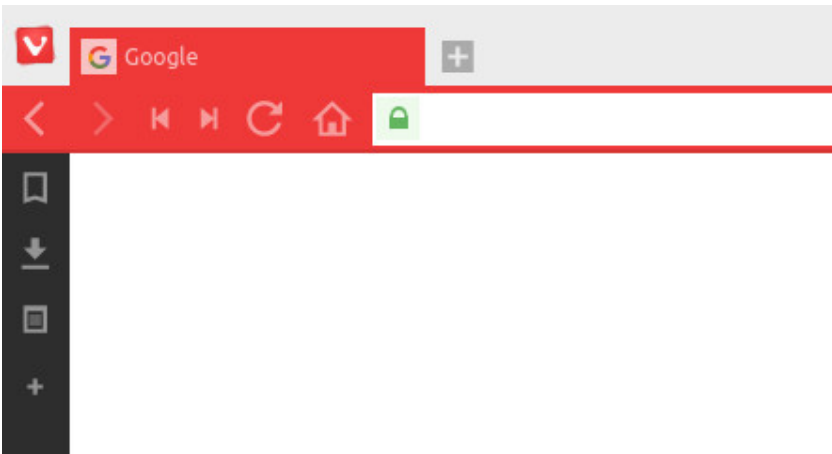
You may need to adjust that command depending on the version number in the filename by the time you read this.

You start Vivaldi using your usual Unity/desktop launcher.



On first start, Vivaldi will ask if you want to import data from another browser, and what data to import.

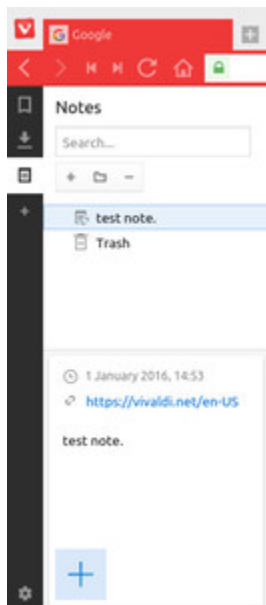
Layout:



Vivaldi has a familiar layout. Very top-left is the Vivaldi icon. This is your menu for File, Edit, View, etc. Top of the screen has your tabs, navigation buttons with URL and quick search, and below that is (if you want it displayed) your bookmarks bar. You'll also notice what looks like skip forward/back as you'd see in a media player. These are what Vivaldi calls fast-forward and rewind buttons. Can't say I've used them much, if at all, but apparently they'll take you to

the first page of the site and predicts the next page.

The left side of the screen has a vertical bar which has buttons for (top to bottom) bookmarks, downloads, notes, and an icon to let you add additional panels.

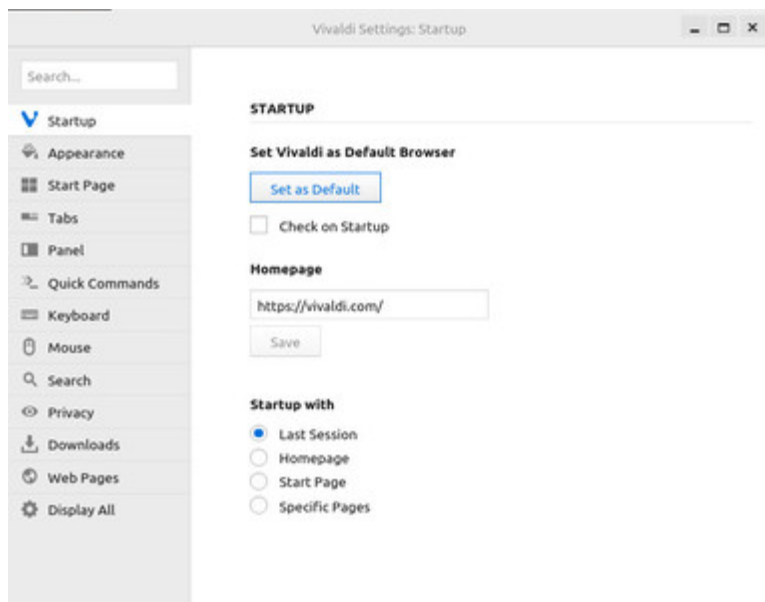


Yes. Notes. You can click the notes icon and save quick reminders for yourself. The ‘+’ button allows you to attach images, or files, to your note. Very handy.

The first thing I noticed was that pages loaded much faster in Vivaldi than in my usual Firefox. And I mean almost instantly. My broadband isn’t the greatest, so having a page load within a second/two was a revelation to me.

Settings:

Clicking the cog icon at the very bottom left of the screen displays the Vivaldi settings.



The settings are divided into categories such as appearance, tabs, privacy, etc. Or, if you want the full Monty, you can click ‘Display All’. The settings window has a search feature which is handy for those hard-to-find features. Everything is in here such as default start page, showing/hiding various bars/menus, interface scale, default font type/size, light/dark theme, and access to the numerous keyboard shortcuts that it uses.

Tweaks:

Initially, I thought Vivaldi was a complete rewrite of a browser, but it turns out that it uses Chromium as a foundation. Which is no bad thing as this allows the user to install Chrome extensions. I tried this out by, of course, installing Adblock.

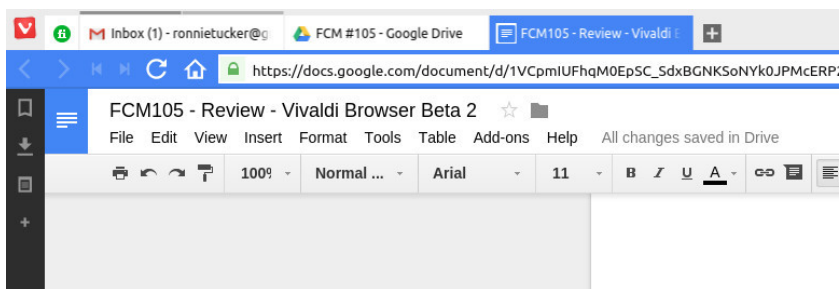
Vivaldi: 1.0.344.37 (Beta 2) (64-bit)
Revision: 9ae925ff17ca36e328d999851001d0b9dae32e33
OS: Linux
Blink: 537.36 (@0)
JavaScript: V8 4.7.80.25
Flash: (Disabled)
User Agent: Mozilla/5.0 (X11; Linux x86_64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/47.0.2526.80 Safari/537.36 Vivaldi/1.0.344.37
Command Line: /opt/vivaldi-beta/vivaldi-bin --ppapi-flash-path --ppapi-flash-version --always-authorize-plugins --disable-translate --flag-switches-begin --flag-switches-end --enable-smooth-scrolling --enable-tab-audio-muting
Executable Path: /opt/vivaldi-beta/vivaldi-bin
Profile Path: /home/ronnie/.config/vivaldi/Default
Variations: 16e0dd70-3f4a17df
775ebbd7-3d47f4f4
97dfc274-3f4a17df
4ea303a6-3f4a17df
5c3cc7b1-3f4a17df



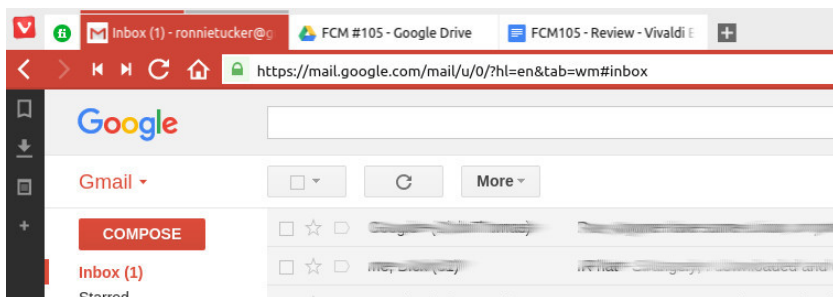
Vivaldi Technologies AS.
A Browser For Our Friends

Copyright 2016 Vivaldi Technologies AS. All rights reserved.
Vivaldi is made possible by the [Chromium](#) open source project and other [open source software](#).
Vivaldi [Terms of Service](#)

Vivaldi has a few tricks up its sleeve, though. A nice touch is that the navigation bar and tab will take its colour automatically from the page you're on. For example, as I write this in Google Docs, the tab and bar is blue.

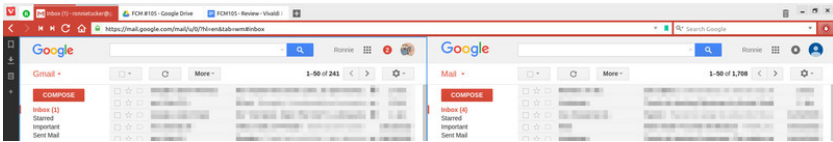


If I switch over to my Gmail it will turn red.



A handy feature in Vivaldi is tab grouping. What I've been doing is opening both my Gmail accounts and grouping them into one tab. If

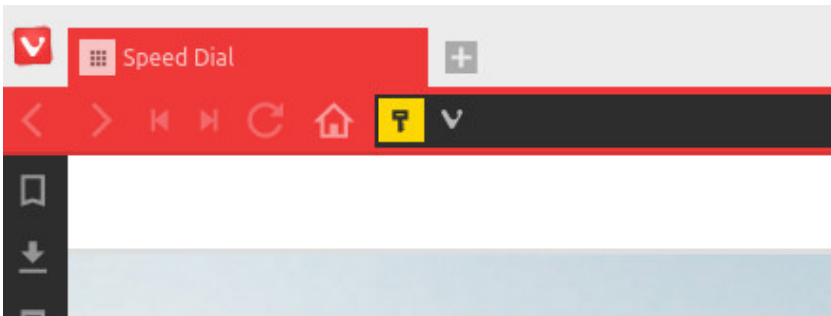
you look closely at the red tab in the photo, you'll see that it has two red bars above it. That's two tabs in one. I can click that to switch between (in this case) two tabs. But there's more! You can also right-click on the tab and click 'tab stack' and it will split the screen to show your tab group.



Couple that with the note-taking bar and you're set!

Privacy:

I'm no privacy expert, so can't comment on its security, but I'd have to assume it is pretty secure if it's using Chromium as its underbelly.



You can click the Vivaldi button and choose File > New Private Window, and it will display a new window with a yellow icon (with a black key) and with a black URL bar.

Missing:

What Vivaldi doesn't do, but I hear is coming, is the synchronisation of bookmarks between devices. This doesn't bother me as I use EverSync to go between (formerly Firefox) Vivaldi on my desktop machine, Firefox on my laptop, and Chrome on my tablet and phone.

Flash is also missing from Vivaldi. Whilst some replies in their forum recommend installing Chrome (to use its plugins), or to install the Pepper Flash package(s) from the repos. I couldn't get Flash to work with Vivaldi after trying both ideas.

Conclusion:

I have to say, I'm pretty impressed with Vivaldi. I wasn't expecting much (since it's only the second beta), but it certainly seems faster and I love the tab grouping and screen-split features.

Give it a try. You've nothing to lose.

MyGica ATV582 TV Box Review

Charles McColm

Old desktop systems are great for repurposing as a KODI entertainment system server. Stick a few multi-terabyte drives in an old dual or quad core computer, with a \$30 fanless video card with HDMI out, along with Ubuntu and KODI installed, and you have a nice 1080p capable entertainment system. This kind of solution might work great for a basement, but if you're looking for a more elegant solution for your living room or a second room, a much smaller device like the MyGica ATV582 is a better solution.

When you open the packaging, the first remarkable thing you'll notice is how small the ATV582 is, it's less than an inch high, and is shorter than the length of an average cell phone. The front bears a couple of lights, a network status light, and a power status light, as well as an infrared sensor. On the right hand side of the ATV582 is a single microSD slot and two USB ports. The back of the device has a gigabit LAN port, an A/V port, an HDMI port, DC power port, and the Wi-Fi antenna. Also included with the ATV582 are an HDMI cable, a very short A/V cable (which is really more of an adapter than a cable), an AC adapter, and a remote control. The unit also comes with a small quick-start guide and a warning not to return the device to the store, but to call MyGica if you have issues.



The ATV582 is based on the ARM Cortex A9 AMlogic S802-B quad-core processor with the Mali-450 octa-core GPU. There is 1GB of RAM onboard, and 8GB of flash memory. The ATV582 we purchased came with Android 4.4 Kitkat.

Setup was as simple as turning the box on, pulling the plastic tape out of the remote so the battery made contact, and stepping through 4 screens: welcome, language, screen and network. We chose to connect our unit to a LAN connection because we have a lot of large media files stored on another server.



While we didn't have any 4K media files to test the unit's 4K claims, it was more than capable of playing the 1080p MKV files (some as large as 44GB) stored on our Linux-based KODI network server (shared via SAMBA). The unit ships with an older version of KODI 14.2, but it works just fine for playing media.

The remote control is fairly simple at first glance. It has the following buttons: power on/off, volume up/down, home, select/enter, navigation left/right/up/down, mouse on/off, back, stop, play/pause, fast forward, rewind, and menu. But if you flip the remote over, there is a small qwerty keyboard on the other side. The remote control comes with a USB receiver that must be plugged into the ATTV582 for the remote to work. MyGica has included a QR code in the setup guide for Android phone users who'd prefer to use their phone as a remote control for the device.



One of the improvements the ATV582 has over its baby brother, the larger-sized dual-core ATV520E, is the MyGica user interface. Instead of trying to simplify a desktop with many icons, it has that cleaner look of a touch interface, KODI is in fact one of the first applications on the home screen. The ATV520E also came with a simpler keyboard-less remote. The keyboard on the flip side of the ATV582 remote takes a little bit of getting used to. If you find yourself unable to type using the keyboard characters, press the function key to switch between the character sets. The mouse on the remote is all but useless for certain Android games, you'll need a real mouse to play some games.

The left side of the ATV582 is used to vent heat. Because the unit is so small there are not a lot of ports, only 2 USB, 1 of which is taken up by the remote's IR receiver. Having a single usable USB port is this unit's biggest shortcoming. For those of you who like to wall-mount everything, the ATV582 also lacks any kind of holes on the bottom for mounting, which means you'll have to resort to using something like 3M velcro tape to mount the unit. Both of these issues are really a direct result of the unit being so small. MyGica could have provided some way to mount the ATV582, but it would have likely been a touch thicker.



The size of the ATV582 is also its best feature, it's so inconspicuous that it's barely noticeable if you put a couple of picture frames or other decorations next to it. Hidden in the ATV582 are the powerful quad-core processor and octa-core graphics processing unit. They're much more powerful than the ATV520E cousin, and play large size high-definition files just fine. The remote with keyboard was more than expected, and other than gaming usage, works very well for all other tasks. While KitKat is old by Android standards, it's been rock stable the past few weeks – requiring a reboot only once. At just over \$100 CDN, it ended up being a fantastic deal for the price.

4/5 Stars

Charles McColm is the author of Instant XBMC, a short book on installing and configuring XBMCbuntu (a *buntu + XBMC distribution) - still relevant for Kodi, and the project manager of a not-for-profit computer reuse project. When not building PCs, removing malware, and encouraging people to use GNU/Linux, Charles works on reinventing his blog at <http://www.charlesmccolm.com/>.

Setting up PGP email encryption: Thunderbird with Enigmail

by Walter Samsberg

To understand how PGP email works, you first need to know the basics of public/private key encryption, a.k.a. RSA cryptography (if you already know, you can skip this paragraph). It might be compared to a P.O. box where everyone can see your box number, but only you know the combination to get in. In an RSA public/private key pair, the public key can be used to encrypt information; once encrypted, the only thing that can decode the message is the private key. PGP is the email application for the RSA concept. I can send my friend an encrypted message without going to the trouble of driving to their house with a flashdrive to agree on a key. All my client software has to do is find my friend's public key from a server, and the rest is a breeze.

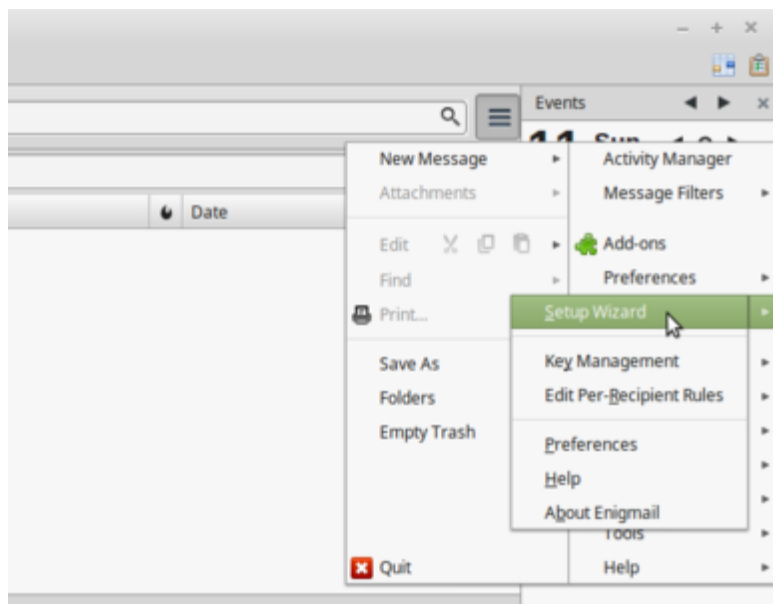
To get started on this, you first need to have Thunderbird installed. If not, go ahead and install it by typing in a terminal window:

```
sudo apt-get install thunderbird
```

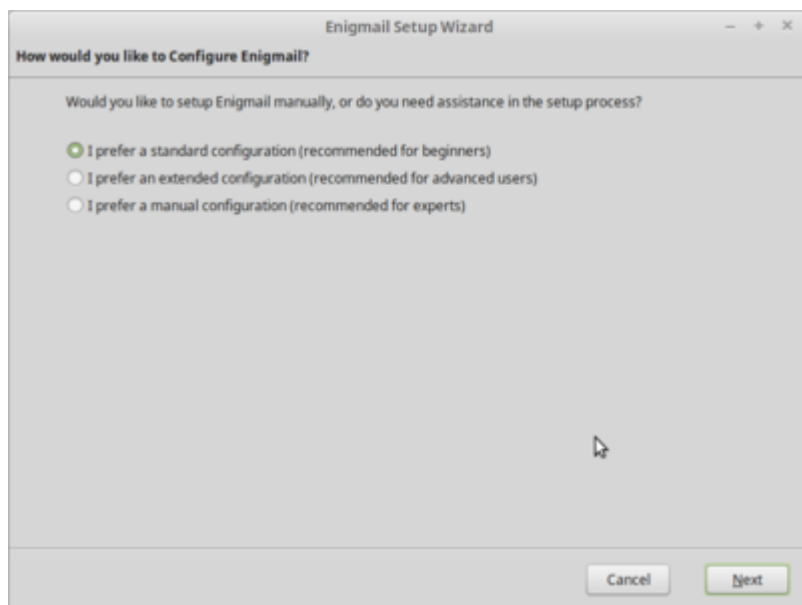
Next, install enigmail

```
sudo apt-get install enigmail
```

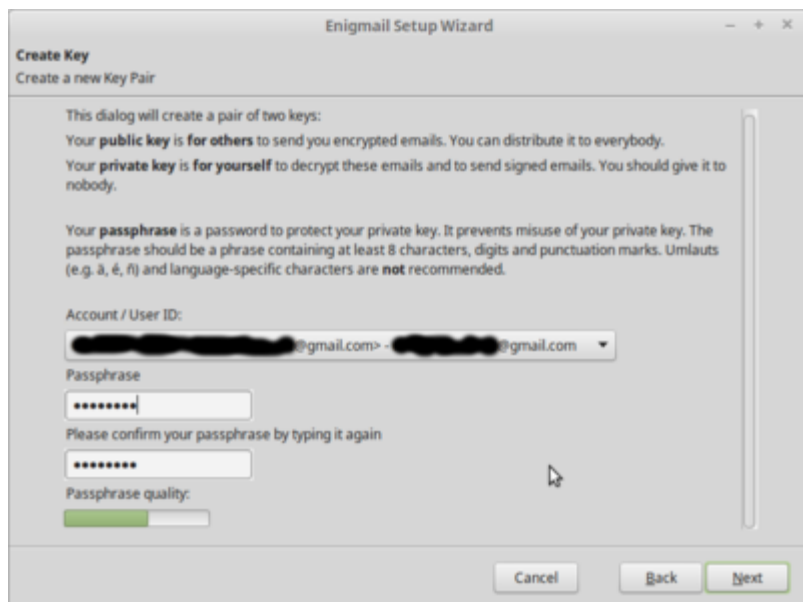
Assuming that you now have your email setup in Thunderbird, launch the application and go to Menu > Enigmail > Setup Wizard.



Proceed by setting up your PGP key.



Enter an 8 digit passphrase to encrypt your private key.



The screenshot shows the 'Create Key' window of the Enigmail Setup Wizard. The title bar reads 'Enigmail Setup Wizard'. The window has a header 'Create Key' and a subtitle 'Create a new Key Pair'. The main text explains that a pair of keys will be created: a public key for others to encrypt emails and a private key for oneself to decrypt and sign emails. It also explains the passphrase, which is a password to protect the private key, and provides guidelines for its strength (at least 8 characters, digits, and punctuation, no umlauts or language-specific characters). Below this, there is a text field for 'Account / User ID' with a dropdown menu showing '@gmail.com'. There are two password fields: one for the 'Passphrase' and another for 'Please confirm your passphrase by typing it again'. A 'Passphrase quality' progress bar is shown below the confirmation field. At the bottom right, there are three buttons: 'Cancel', 'Back', and 'Next'.

Enigmail Setup Wizard

Create Key
Create a new Key Pair

This dialog will create a pair of two keys:

Your **public key** is **for others** to send you encrypted emails. You can distribute it to everybody.

Your **private key** is **for yourself** to decrypt these emails and to send signed emails. You should give it to nobody.

Your **passphrase** is a password to protect your private key. It prevents misuse of your private key. The passphrase should be a phrase containing at least 8 characters, digits and punctuation marks. Umlauts (e.g. ä, é, ñ) and language-specific characters are **not** recommended.

Account / User ID:
[redacted]@gmail.com - [redacted]@gmail.com ▼

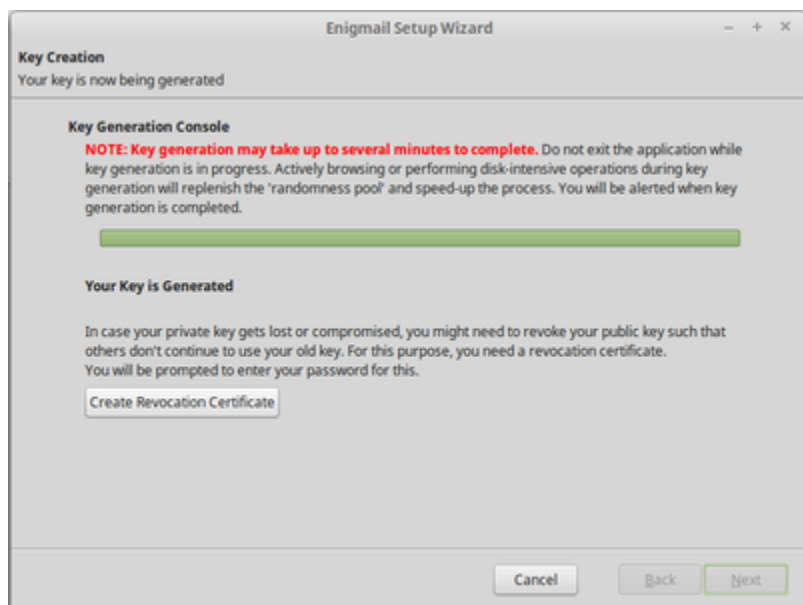
Passphrase
[redacted]

Please confirm your passphrase by typing it again
[redacted]

Passphrase quality:
[Progress bar]

Cancel Back Next

Your computer will then generate a 4096-bit RSA keypair.



The screenshot shows the 'Key Creation' window of the Enigmail Setup Wizard. The title bar reads 'Enigmail Setup Wizard'. The window has a header 'Key Creation' and a subtitle 'Your key is now being generated'. The main text is a 'Key Generation Console' with a red note: 'NOTE: Key generation may take up to several minutes to complete. Do not exit the application while key generation is in progress. Actively browsing or performing disk-intensive operations during key generation will replenish the 'randomness pool' and speed-up the process. You will be alerted when key generation is completed.' Below the note is a green progress bar. Below the progress bar, the text 'Your Key is Generated' is displayed. Below this, there is a paragraph explaining that if the private key is lost or compromised, the user might need to revoke their public key and obtain a revocation certificate. At the bottom, there is a button labeled 'Create Revocation Certificate'. At the bottom right, there are three buttons: 'Cancel', 'Back', and 'Next'.

Enigmail Setup Wizard

Key Creation
Your key is now being generated

Key Generation Console

NOTE: Key generation may take up to several minutes to complete. Do not exit the application while key generation is in progress. Actively browsing or performing disk-intensive operations during key generation will replenish the 'randomness pool' and speed-up the process. You will be alerted when key generation is completed.

[Progress bar]

Your Key is Generated

In case your private key gets lost or compromised, you might need to revoke your public key such that others don't continue to use your old key. For this purpose, you need a revocation certificate. You will be prompted to enter your password for this.

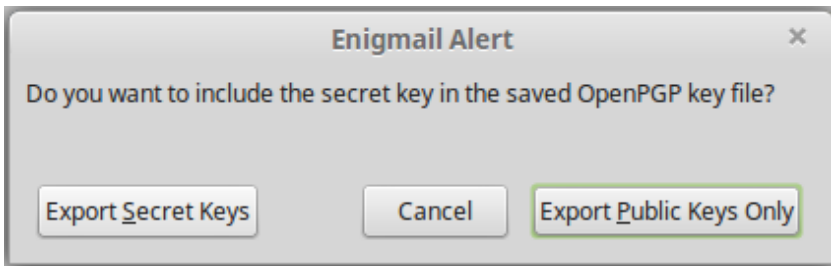
Create Revocation Certificate

Cancel Back Next

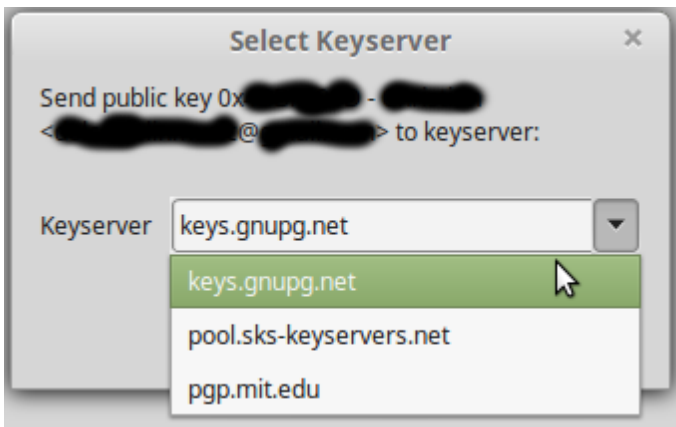
After generating the key, follow through by saving the Revocation Certificate somewhere safe such as a flash drive.

You're almost done! All that remains now is backing up your private key, and publishing your public key to a few servers so that your friend's email client can automatically download it.

To backup your private key, go to (in Thunderbird) Menu > Enigmail > Key Management. Select your key and then, under Key Management, go to File > Export Keys to File, and click Export Secret Keys.



Again, I recommend that offline storage would work best such as a flash drive. Now, to export your public key to a keyserver, without closing the Key Management window, select your key and go to Keyserver > Upload Public Keys.



There you should see a list of keyservers to choose from. Any of the three will work fine, but it also wouldn't be a bad idea to upload your public key to all of the servers that are listed.

Now you are all set to start receiving encrypted PGP emails! Also,

when you go to send someone an encrypted message, Thunderbird will help you find their public key on one of the servers. With a key length of 4096-bit, this totally makes your private messaging military grade.

Ubuntu Phone

by Ronnie Tocker



This list is only a highlight of the few changes available in this update. Please check the detailed changes for all the changes included in this OTA.

Important features

- New 15.04.3 framework
- Media-hub exposure of mpris playlist support
- Update the bluetooth stack to Bluez5
- Media consumption (audio) in scopes
- Smooth refresh of scopes
- Custom ringtone support
- Sound notification on low-battery state
- Download of arbitrary file types in the webbrowser-app
- Convergence changes for the ubuntu-ui-toolkit

Bugfixes

- Camera fixes for proper resolution support
- Location-service improvements
- Better translation coverage
- Performance boosts, improvements with regards to UI hangs
- And many many more...!

Detailed changes

- Commitlog: <http://people.canonical.com/~lzemczak/landing-team/ota/ota-9.commitlog>
- Milestone bug list: <https://launchpad.net/canonical-devices-system-image/+milestone/ww02-2016>

DIRT Showdown

by Oscar Rivera

At long last, there is a true, fast, adrenaline-pumping racing game available for Linux! That game is DIRT Showdown, developed and published by Codemasters. It was originally released for Microsoft Windows, Xbox 360, and PlayStation 3 back in 2012. Then, in 2014, it was released for Mac OS X, and, most recently, released for Linux, August 2015.

DIRT Showdown can be purchased and downloaded for Ubuntu through Steam for \$14.99 (recent Steam sales have had it as low as \$2.99). The game is much more than a racing game as it also contains two other playing styles, which are named Demolition and Hoonigan. There are different types of Races, just like there are different types of Demolition and different types of Hoonigan events. The Racing events and the Demolition events are pretty much self-explanatory. The Hoonigan events can be obstacle courses where you must complete tricks within a limited time, or they can be courses in which you must smash different color boxes in the right order (as specified by the computer), also within a limited time. These are all part of what's called the Showdown Tour. In addition to the Showdown Tour, there are two other modes of playing:

- Online Multi-Player (which at this time is almost non-existent due to a lack of online players)
- Joyride in which you are the only car and free to roam anywhere you want, but must collect challenges in the form of a scavenger hunt.

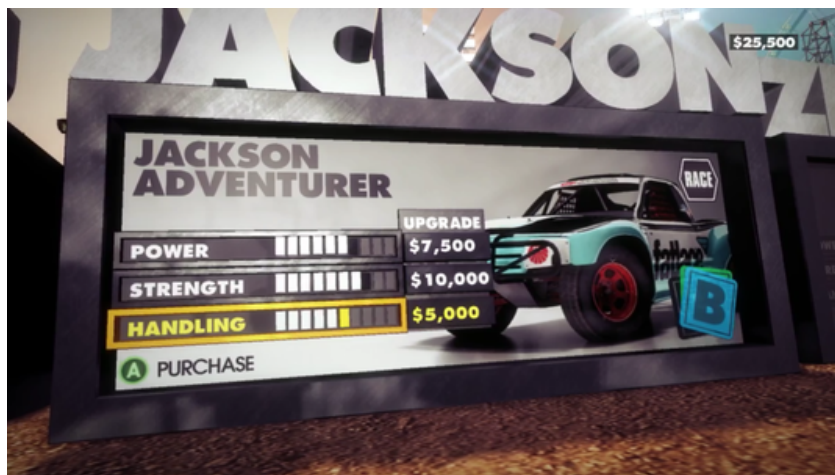
Aside from the Multi-Player aspect of the game, exhilarating thrills abound as the game has the potential to appeal to a wide variety of gamers, from the casual to the hard-core.

Playing DIRT Showdown is pretty straightforward. It is recommended that you play using a game controller, which is what

I did with my Razer Onza controller and it was flawless. You can also play the game with mouse/keyboard if you so desire. There really isn't a tutorial but anyone who's played a car racing game will feel right at home with this one; it's not too difficult to pick up.



The responsiveness to controls has had zero lag in all of the tracks I've played. Initially in the Showdown Tour's Pro tournament, there are only a couple of tracks available, but by racing these tracks and placing in one of the top spots, more tracks become available. After completing all tracks in the beginner's "Pro" league, then you can advance to the "All-Star" league followed by the "Champion" league. Finally, the "Legend" league is the top tier which is unlocked only after completing all previous three leagues. Like most racing games, you have the choice of which car to choose and you can also level up your car by purchasing Power, Handling or Strength upgrades with the prize money you're awarded from previous races. In no time you can have a fast, powerful car that can take more than a beating. Alternatively, you can also purchase other cars as they become unlocked by winning various events.



Although the game was optimized for AMD GPUs, and I'm using an Nvidia GTX 960, I've had zero problems with the game so far. The graphics have been fantastic, and there have been no glitches running the game at near maximum settings. There is a built-in Benchmark that gave me an average of 51 frames-per-second so performance has not been an issue yet and I've already been playing the game for quite a while. There have been a few scenes that almost left me in awe with the multi-layered sunsets displayed behind the race tracks. The sound is your standard high-octane, full-throttle sonic experience. Sound effects of idling engines revving up to maximum speed in time, followed by the wearing down of brake pads and rubber tires as they burn in unison with the pavement in a struggle to stop the fast moving vehicle before it collides with another car, is like music to my ears. The voice narrator is a sportscaster who gives you the play-by-play while managing to add a bit of humor from time to time. The soundtrack is your typical rock soundtrack found in most racing games. All in all, the sound, the graphics and the controls are definitely strong aspects of the game, especially for a 2012 release.

Besides the lack of a dedicated tutorial, which for this particular game is not really needed, the only other negative point is the online play mode. I'm sure it works great; however, I haven't been able to really test it out due to there being a lack of online gamers. I've tried multiple times to play online against other players but haven't been able to pair up against even one single person. In fact,

at the game's Steam Forum site, there is a thread asking for friend requests to join in online playing. I am almost certain that the lack of online gamers is due to the fact that DIRT Showdown was released almost four years ago and there have already been at least two other games from the DIRT series released ever since. It is now up to Linux gamers to breathe new life into the online experience for this game by buying it and playing it against possibly other Linux gamers.



Despite the lack of online competition, I still recommend DIRT Showdown to fellow Linux gamers as it happens to be one of the best car racing games available for Linux at the moment. The graphics, though no longer revolutionary, are still pretty impressive. The sound is great, and the overall playability makes it feel like it was originally developed for Linux which makes DIRT Showdown a game worth getting. The lack of online competition makes me drop the rating by a full star but everything else makes this a must have for racing aficionados and casual gamers alike.

4 out of 5 stars.

Minimum Requirements:

OS: Ubuntu 14.10, Mint 17.1 or similar Linux distribution
Processor: AMD Athlon 64 x2 or Intel Core2Duo @3.2Ghz

Memory: 4 GB RAM

Graphics: nVidia/AMD OpenGL 4.1 level compatible

Graphics Memory: 1GB

Hard Disk Space: 12GB

Sound: PulseAudio/ALSA Compatible

My gaming box

AMD FX-6100 3.3GHz CPU (over-clocked to 3.5GHz)

Asus M5A97-EVO motherboard

Gigabyte Windforce GeForce GTX 960 graphics card with 346.72 proprietary driver

16GB of Kingston Hyper X RAM & 1TB Seagate Barracuda hard drive

Ubuntu 14.04.3 LTS with Unity desktop

Oscar graduated with a music degree from CSUN, is a Music Director/Teacher, software/hardware beta tester, Wikipedia editor, and active member of the Ubuntu community. You can follow him at: < www.gplus.to/7bluehand > <https://twitter.com/7bluehand> http://www.twitch.tv/omni_knight_fcm or email him at: www.7bluehand@gmail.com

Don't Forget Patreon

By Ronnie - Jan 4, 2016

Just a quick reminder that Full Circle is still on Patreon. Everything from Patreon helps keep the FCM site, hosting, and domain name going.



If you can spare a \$ or two then go here: <https://www.patreon.com/fullcirclemagazine>

- For \$1/month you get our eternal thanks, and a warm fuzzy feeling inside.
- For \$3/month you can have your name on the Patreon page in each issue of FCM.
- For \$5/month you can have access to a preview PDF of FCM two weeks before release day.

If you'd rather use PayPal then that's great. There's a DONATE button in the right most column on the FCM homepage: <http://fullcirclemagazine.org> – just below the news on the right – and your name will appear on the Patreon page in each issue.

Patrons and Donors

PATRONS

Bill Berninghausen
Jack McMahon
Linda P
Remke Schuurmans

Norman Phillips
Tom Rausner
Charles Battersby
Tom Bell
Oscar Rivera
Alex Crabtree
Ray Spain
Richard Underwood
Charles Anderson
Ricardo Coalla
Chris Giltnane
William von Hagen
Mark Shuttleworth
Juan Ortiz
Joe Gulizia
Kevin Raulins
Doug Bruce
Pekka Niemi
Rob Fitzgerald
Brian M Murray
Roy Milner
Brian Bogdan
Scott Mack
Dennis Mack
John Helmers
JT
Paul Radovan

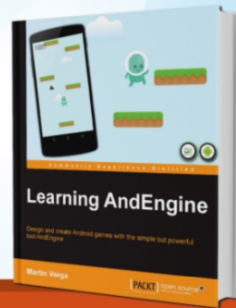
DONATIONS

John Niendorf
Daniel Witzel
Douglas Brown
Donald Altman
Patrick Scango
Tony Wood
Paul Miller
Colin McCubbin
Randy Brinson

John Fromm
Graham Driver
Chris Burmajster
Steven McKee
Manuel Rey Garcia
Alejandro Carmona Ligeon
siniša vidović
Glenn Heaton
Louis W Adams Jr
Raul Thomas
Pascal Lemaitre



[PACKT]
PUBLISHING



Offer Valid till - 21st November 2014

Use Discount Code - gUdb4pzLI

[HTTP://BIT.LY/1rG1QDE](http://bit.ly/1rG1QDE)

Contribute to Full Circle Magazine

FULL CIRCLE NEEDS YOU!

A magazine isn't a magazine without articles – and Full Circle is no exception. We need your opinions, desktops, stories, how-to's, reviews, and anything else you want to tell your fellow *buntu users. Send your articles to: articles@fullcirclemagazine.org.

We are always looking out for new articles to include in Full Circle. For help and advice, please see the Official Full Circle Style Guide: <http://url.fullcirclemagazine.org/75d471>

Send your comments or Linux experiences to:
letters@fullcirclemagazine.org

Hardware/software reviews should be sent to:
reviews@fullcirclemagazine.org

Questions for Q&A should go to: questions@fullcirclemagazine.org

Desktop screens should be emailed to: misc@fullcirclemagazine.org

... or you can visit our forum via: www.fullcirclemagazine.org

Full Circle Team:

Editor - Ronnie Tucker - ronnie@fullcirclemagazine.org

Webmaster - Lucas Westermann - admin@fullcirclemagazine.org

Podcast - Les Pounder & Co. - podcast@fullcirclemagazine.org

Editing & Proofreading:

Mike Kennedy

Lucas Westermann

Gord Campbell

Robert Orsino

Josh Hertel

Bert Jerred

Our thanks go out to Canonical, to the many translation teams around the world, and to Thorsten Wilms for the current Full Circle

logo.

Getting Full Circle Magazine:

EPUB Format - Most editions of Full Circle have a link to the epub file on the downloads page. If you have any problems with the epub file, you can drop an email to: mobile@fullcirclemagazine.org

Google Currents - Install the Google Currents app on your Android/Apple devices, search for 'full circle' (within the app), and you'll be able to add issues 55+. Or, you can click the links on the FCM download pages.

Ubuntu Software Centre - You can get FCM via the Ubuntu Software Centre: <https://apps.ubuntu.com/cat/>. Search for 'full circle', choose an issue, and click the download button.

Issuu - You can read Full Circle online via Issuu: <http://issuu.com/fullcirclemagazine>. Please share and rate FCM as it helps to spread the word about FCM and Ubuntu Linux.